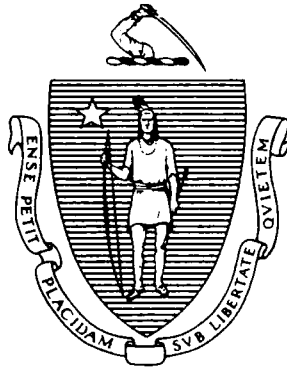


Commonwealth of Massachusetts

Division of Public Employee
Retirement Administration



INVESTMENT REPORT
MASSACHUSETTS CONTRIBUTORY RETIREMENT
SYSTEMS FOR PUBLIC EMPLOYEES

DECEMBER 31, 1993

WILLIAM F. WELD
Governor

MARK E. ROBINSON
Secretary of Administration
and Finance

JOHN J. McGLYNN
Commissioner
Public Employee Retirement Administration

May 9, 1994

1993 was a very successful year for most Massachusetts public retirement systems as the average investment return was 12.88%.

A total of 77 systems achieved a return in excess of 10%, and all but 10 systems returned greater than 8%. In the 1985-1993 period the average return was 11.56%, contributing to a growth of assets during the period from \$4.6 billion to \$18.06 billion. Retirement board members are to be congratulated for their efforts.

Massachusetts has been fortunate in that capital markets have performed very well in the years since greater investment authority was granted to retirement boards. The statistics to which I have referred are a product of the decisions of board members and their managers, and also reflect the positive investment environment of the last decade. However, all of those interested in pension fund investing should keep in mind that positive capital markets are not permanent. In the early part of 1994 some signs have pointed to a change in the investment environment. If this trend continues, retirement boards and their managers will be challenged to adjust.

In reviewing investment performance, it is important to keep in mind that the investment of system assets represents a critical element in the funding of pension benefits. Investment planning must be based upon the financial status and the financial needs of the system. In the context of actuarial based funding schedules, investment gains or losses will directly impact pension appropriations. Over time, as appropriations are determined by funding schedules, board investment activities will receive increased scrutiny by public officials, members and taxpayers.

This report details investment performance for one year, three years, five years and the 1985-1993 period. Long term performance is the most important measure of the success or failure of investment strategies. All boards should review the activities of their money managers on a regular basis. Such monitoring is an integral part of fiduciary duty and will enable board members to make changes in management structure when necessary.

May I take this opportunity to thank the retirement board members and staff, investment managers, consultants and custodians for their cooperation without which this study could not have been conducted.

Sincerely,

A handwritten signature in dark ink, appearing to read "John J. McGlynn", written in a cursive style.

JOHN J. McGLYNN
Commissioner

TABLE OF CONTENTS

PART I:	<i>ANNUAL REPORT OF THE MASSACHUSETTS CONTRIBUTORY RETIREMENT SYSTEMS FOR THE YEAR ENDING DECEMBER 31, 1993.....</i>	<i>1 - 3</i>
	Table 1: 1993 Returns and Annualized Past Returns.....	4 - 7
	Table 2: Historical Annual Returns.....	8 - 11
PART II:	<i>ASSET GROWTH.....</i>	<i>12</i>
	Table 3: Asset Growth.....	13 - 16
PART III:	<i>FEES AND TURNOVER.....</i>	<i>17 - 18</i>
	Table 4: Gross and Net Performance/Management, Custodian Bank and Consultant Fees.....	19 - 22
	Table 5: Portfolio Turnover.....	23 - 26
PART IV:	<i>INVESTMENT COUNSELORS, CONSULTANTS AND CUSTODIAN BANKS.....</i>	<i>27 - 52</i>

PART I:

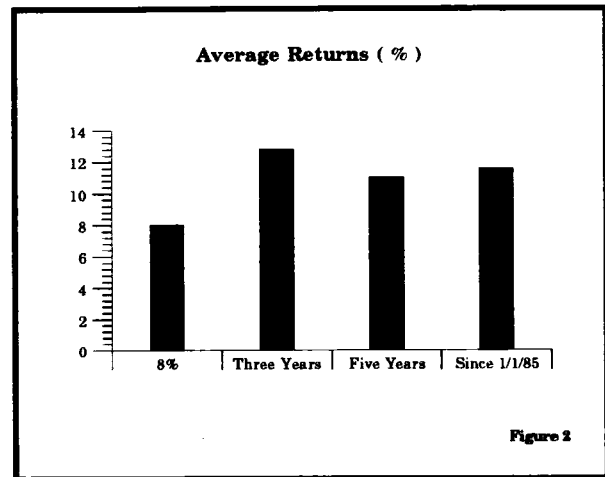
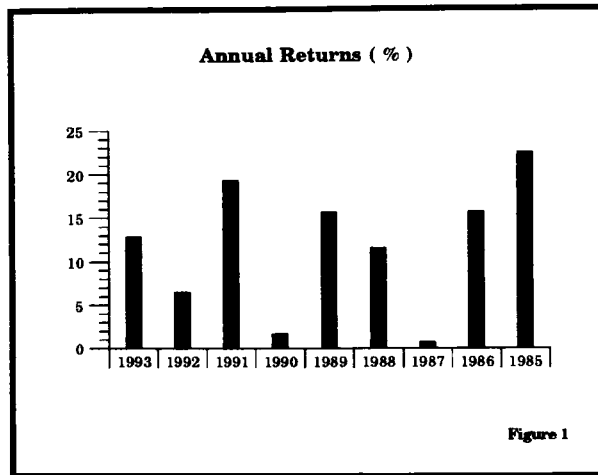
ANNUAL REPORT OF THE MASSACHUSETTS CONTRIBUTORY RETIREMENT SYSTEMS FOR THE YEAR ENDING DECEMBER 31, 1993

Massachusetts public pension monies are invested by 104 retirement boards, the Pension Reserves Investment Management Board (P.R.I.M.) and the Investment Committee of the State Treasurer's Office. Each retirement board is responsible for the assets of its system while the P.R.I.M. Board invests the pension reserve funds of the Commonwealth as well as the assets of local systems which have purchased shares of the Pension Reserves Investment Trust Fund (P.R.I.T.) The Investment Committee of the State Treasurer's Office invests the annuity accounts of the State Employees' Retirement System and the Teachers' Retirement System. This report will provide a rate of return for the State Employees' Retirement System and the Teachers' Retirement System which includes the performance of the Treasurer's Investment Committee and the Pension Reserves Investment Management Board. Although P.R.I.M. is separately listed, the Treasurer's Office is not. The return on the assets, exclusively the responsibility of the Investment Committee of the State Treasurer's Office in 1993, was 13.62%.

During the last nine years Massachusetts public pension plans have enjoyed the benefits of generally positive capital markets. This has contributed to significant asset growth and an improvement in the fiscal condition of the retirement systems. Paralleling this development has been the adoption by most systems of actuarially based funding schedules. Appropriations under these schedules will be greatly impacted by investment performance. Boards should be aware that, to the extent that actual performance falls below the assumed rate of return used in the actuarial valuation on which the schedule is based, actuarial losses are created. Any such loss must be made up through the annual appropriation.

This report details investment performance for one year, three years, five years and the 1985-1993 period. Long term performance is the most important measure of the success or failure of investment strategies. All boards should review the activities of their money managers on a regular basis.

The expected rate of return used in most recent actuarial reports of the Massachusetts systems is 8%. In 1993, the average rate of return was 12.88%, from 1991-1993, the average rate of return was 12.75%, from 1989-1993, the average rate of return was 10.99% and from 1985-1993, the average rate of return was 11.56%. (See Figures 1 and 2.)



Only a decade ago the assets of Massachusetts public pension systems were invested according to strict statutory guidelines. Changes in the law have enabled board members to adopt comprehensive investment strategies and to retain professional investment managers. As that process has unfolded, the responsibility of board members as fiduciaries has evolved. Each fiduciary must discharge his/her duties for the exclusive purpose of providing benefits to system members and their beneficiaries, with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of like character and with like aims and by diversifying the investments of the system so as to minimize the risk of large losses unless under the circumstances, it is clearly prudent not to do so.

Board members must meet this standard in developing investment plans, asset allocation, the selection of managers and in monitoring the performance of managers.

The tables that follow contain this information:

Table One: 1993 Returns and Annualized Past Returns

Table Two: Returns for 1985, 1986, 1987, 1988, 1989, 1990, 1991, and 1992;

Please note:

- The State Employees' and Teachers' Retirement Systems invest in a trust administered by the Investment Committee of the State Treasurer (MASTERS Trust). The Office of the Treasurer has reported a return of 13.62%. This return differs from that reported in this booklet because the returns reported in this booklet include those assets of the State Employees' and Teachers' Retirement Systems invested with the PRIT Fund.
- PERA employs the generally recognized methodology of the Bank Administration Institute in computing returns.
- Prior to the finalization of performance figures, retirement boards are provided with an opportunity to review the records on which returns are based.
- Woburn did not submit monthly cashbooks for 1993 to PERA. The cash balance and total market value, therefore, do not reflect cash items such as appropriations/disbursements. PERA was able to obtain custodian bank statements and used these statements to track investment activity.

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1993**

Table One

1993 Returns and Annualized Past Returns

Page One

Retirement System	1993		Three Years		Five Years		Since January 1985	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank
ADAMS	9.19	83	11.99	61	10.54	64	10.98	64
AMESBURY	12.12	35	12.53	49	11.32	37	10.64	75
ANDOVER	2.91	107	14.21	8	11.00	50	11.84	23
ARLINGTON	9.83	78	11.91	68	10.85	56	11.51	36
ATHOL	6.48	104	9.45	106	10.05	75	10.23	91
ATTLEBORO	10.44	72	11.96	64	11.96	23	11.24	48
BARNSTABLE COUNTY	9.21	82	11.37	88	8.27	104	8.57	102
BELMONT	11.45	51	14.12	10	11.80	25	10.98	65
BERKSHIRE COUNTY	11.35	57	12.98	31	10.86	55	11.06	59
BEVERLY	9.47	81	12.36	51	9.72	92	10.12	92
BLUE HILLS REG VO	11.41	53	13.56	21	11.90	24	10.75	73
BOSTON	13.74	24	13.37	25	11.25	41	11.65	32
BRAINTREE	7.94	98	10.59	99	9.59	93	11.34	45
BRISTOL COUNTY	10.35	75	11.79	77	11.27	39	10.46	80
BROCKTON	18.10	1	15.52	2	11.26	40	11.10	55
BROOKLINE	12.41	33	15.11	5	13.15	4	11.54	35
CAMBRIDGE	13.33	27	13.00	30	9.87	87	11.12	54
CHELSEA	11.05	63	12.84	37	11.75	27	11.37	42
CHICOPEE	13.09	29	13.40	24	11.48	34	11.05	61
CLINTON	11.17	62	12.23	54	8.72	100	9.42	97
CONCORD	11.57	46	13.37	26	12.29	17	11.40	38
DANVERS	11.97	40	12.76	41	11.58	30	10.94	67
DEDHAM	16.08	4	12.00	59	9.98	80	11.40	39
DUKES COUNTY	10.50	70	9.42	107	6.90	106	8.16	106
EASTHAMPTON	8.37	89	11.25	91	11.66	28	11.92	19
ESSEX COUNTY	11.40	54	12.19	55	10.80	58	11.70	29
EVERETT	12.24	34	14.05	12	13.45	2	12.21	8

Retirement System	1993		Three Years		Five Years		Since January 1985	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank
FAIRHAVEN	15.70	13	11.85	71	9.96	81	10.86	70
FALL RIVER	11.28	59	12.87	36	12.49	11	12.21	9
FALMOUTH	4.32	105	11.17	92	12.25	20	11.49	37
FITCHBURG	7.32	103	11.04	93	11.04	48	10.46	81
FRAMINGHAM	14.57	19	14.47	7	12.31	16	11.78	25
FRANKLIN COUNTY	10.71	65	12.07	57	10.72	59	9.79	95
GARDNER	15.94	8	11.84	72	10.08	73	10.97	66
GLOUCESTER	11.28	60	12.80	40	11.04	49	12.12	11
GREATER LAWRENCE	10.70	67	12.38	50	10.41	65	8.50	103
GREENFIELD	12.06	38	13.49	22	12.29	18	11.07	58
HAMPDEN COUNTY	11.48	49	12.67	45	10.98	53	11.35	44
HAMPSHIRE COUNTY	13.99	21	12.28	53	11.13	45	10.75	74
HAVERHILL	9.68	80	12.95	32	10.61	62	11.98	16
HINGHAM	15.64	16	11.44	84	9.39	95	10.58	77
HOLYOKE	11.63	43	12.83	38	10.96	54	12.51	6
HULL	8.12	93	10.31	102	8.67	101	9.08	98
LAWRENCE	11.91	41	13.25	28	12.28	19	10.99	63
LEOMINSTER	8.83	87	10.87	96	10.31	71	10.58	78
LEXINGTON	10.17	76	14.17	9	11.50	33	11.74	26
LOWELL	8.10	94	10.81	97	9.07	99	10.04	94
LYNN	8.50	88	13.66	17	11.55	31	11.31	47
MALDEN	9.12	85	15.17	4	12.99	6	11.56	34
MARBLEHEAD	8.97	86	14.60	6	12.54	9	10.91	69
MARLBOROUGH	11.34	58	12.57	48	11.15	44	11.08	57
MASS HOUSING FINA	11.89	42	10.57	100	9.20	96	8.59	101
MASS PORT AUTH	10.71	66	12.92	34	12.34	13	12.99	3
MASS TURNPIKE AUT	7.86	100	10.29	103	10.33	69	11.57	33

Retirement System	1993		Three Years		Five Years		Since January 1985	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank
MASS WATER RESOUR	12.10	36	12.09	56	9.82	89	N/A	N/A
MAYNARD	11.55	47	11.31	89	7.15	105	8.94	99
MEDFORD	10.09	77	11.26	90	10.66	61	11.03	62
MELROSE	12.09	37	12.29	52	11.16	43	11.66	30
METHUEN	11.51	48	11.44	85	9.92	84	10.26	90
MIDDLESEX COUNTY	13.49	26	14.10	11	11.97	22	12.21	10
MILFORD	11.59	44	13.42	23	12.53	10	10.31	85
MILTON	16.01	5	11.98	62	10.06	74	11.21	49
MINUTEMAN REG VO	15.91	9	11.72	79	9.92	85	11.38	41
MONTAGUE	15.67	15	11.95	66	10.01	77	10.08	93
NATICK	8.02	97	12.68	44	11.65	29	11.99	14
NEEDHAM	15.90	10	11.88	69	10.00	78	11.99	15
NEW BEDFORD	9.14	84	11.86	70	8.29	103	8.49	104
NEWBURYPORT	11.98	39	12.83	39	11.39	36	10.42	82
NEWTON	15.08	17	15.21	3	11.11	46	11.15	53
NORFOLK COUNTY	14.55	20	11.38	87	9.76	91	11.83	24
NORTH ADAMS	8.27	91	13.98	14	12.66	7	11.37	43
NORTH ATTLEBORO	10.50	71	11.40	86	10.56	63	10.28	88
NORTHAMPTON	7.89	99	13.99	13	12.33	14	10.94	68
NORTHBRIDGE	16.01	6	11.96	65	10.09	72	10.76	72
NORWOOD	11.39	55	11.01	94	11.28	38	11.16	52
PEABODY	12.54	32	12.95	33	10.99	51	11.66	31
PITTSFIELD	11.58	45	12.63	47	11.51	32	11.20	50
PLYMOUTH	3.30	106	11.48	83	11.46	35	11.72	27
PLYMOUTH COUNTY	8.04	96	11.72	80	10.36	68	11.19	51
PRIM BOARD	16.31	3	11.81	74	10.00	79	12.02	13
QUINCY	10.66	68	12.88	35	11.17	42	9.77	96

Retirement System	1993		Three Years		Five Years		Since January 1985	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank
READING	15.96	7	11.97	63	10.04	76	10.53	79
REVERE	7.81	101	10.23	104	8.61	102	8.72	100
SALEM	10.66	69	12.00	60	10.37	67	10.61	76
SAUGUS	15.80	12	11.80	76	9.95	83	10.33	84
SHREWSBURY	11.42	52	10.38	101	9.10	98	11.06	60
SOMERVILLE	9.76	79	11.78	78	9.77	90	10.28	89
SOUTHBRIDGE	12.92	31	13.19	29	9.91	86	10.30	86
SPRINGFIELD	11.46	50	13.68	16	13.26	3	11.97	17
STATE	14.85	18	12.70	43	10.71	60	11.91	20
STATE TEACHERS	13.86	23	12.73	42	11.05	47	11.94	18
STONEHAM	8.10	95	10.96	95	10.41	66	11.33	46
SWAMPSCOTT	10.42	73	13.65	19	12.32	15	12.05	12
TAUNTON	13.02	30	13.29	27	12.38	12	13.46	2
WAKEFIELD	15.84	11	11.81	75	9.83	88	11.87	21
WALTHAM	11.21	61	13.59	20	13.12	5	12.42	7
WATERTOWN	10.96	64	11.66	81	9.55	94	10.29	87
WEBSTER	8.36	90	9.84	105	6.72	107	8.48	105
WELLESLEY	18.07	2	17.40	1	14.34	1	14.12	1
WEST SPRINGFIELD	7.75	102	11.51	82	10.99	52	10.34	83
WESTFIELD	13.96	22	13.76	15	12.58	8	11.85	22
WEYMOUTH	15.69	14	11.83	73	9.96	82	12.69	4
WINCHESTER	10.36	74	12.67	46	11.80	26	11.71	28
WINTHROP	13.52	25	13.66	18	12.10	21	11.39	40
WOBURN	11.36	56	11.92	67	10.85	57	12.62	5
WORCESTER	13.14	28	12.03	58	10.32	70	11.09	56
WORCESTER COUNTY	8.14	92	10.67	98	9.17	97	10.80	71

***Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1993***

Table Two

Historical Annual Returns

Page One

<u>Retirement System</u>	<u>1992 Return</u>	<u>1991 Return</u>	<u>1990 Return</u>	<u>1989 Return</u>	<u>1988 Return</u>	<u>1987 Return</u>	<u>1986 Return</u>	<u>1985 Return</u>
ADAMS	9.04	17.97	5.37	11.52	6.58	5.35	9.14	26.30
AMESBURY	6.36	19.50	5.21	14.00	10.95	0.23	10.19	18.62
ANDOVER	1.08	43.23	-0.12	13.26	10.18	0.95	15.15	26.79
ARLINGTON	8.33	17.80	3.11	15.81	10.23	3.11	16.64	20.13
ATHOL	6.50	15.63	7.91	14.09	9.00	3.72	9.82	19.90
ATTLEBORO	6.48	19.32	5.27	19.11	6.92	2.48	12.91	19.87
BARNSTABLE COUNTY	7.45	17.72	-1.32	9.15	9.14	-5.48	12.69	21.15
BELMONT	10.44	20.76	0.41	17.03	10.95	-2.90	9.59	23.88
BERKSHIRE COUNTY	9.49	18.31	5.08	10.49	9.17	1.83	13.25	21.92
BEVERLY	5.66	22.64	1.65	10.28	10.64	-0.71	12.97	20.71
BLUE HILLS REG VO	9.84	19.67	3.83	15.39	9.51	3.09	13.35	11.67
BOSTON	5.41	21.53	-2.82	20.36	12.73	-3.78	16.12	25.65
BRAINTREE	7.42	16.64	2.68	13.84	10.59	5.18	16.41	22.88
BRISTOL COUNTY	6.22	19.18	6.01	15.18	7.70	-1.20	11.43	21.05
BROCKTON	8.57	20.22	-0.91	11.62	8.12	1.63	12.47	22.38
BROOKLINE	10.01	23.33	1.54	19.78	9.81	0.95	11.78	16.24
CAMBRIDGE	9.74	16.01	0.02	10.95	7.91	-2.86	16.69	31.96
CHELSEA	6.45	21.55	5.70	14.75	9.43	-1.82	13.48	24.06
CHICOPEE	8.60	18.74	4.39	13.10	12.42	-0.18	10.53	20.23
CLINTON	8.01	17.73	-0.18	7.65	7.81	-5.31	12.45	28.89
CONCORD	8.47	20.41	4.48	17.24	10.48	3.68	10.67	16.77
DANVERS	6.57	20.13	5.79	14.05	10.57	1.70	9.84	19.13
DEDHAM	4.84	15.46	-1.64	16.43	9.98	3.61	12.67	27.93
DUKES COUNTY	6.91	10.89	-1.61	8.31	12.01	-4.55	10.68	22.68
EASTHAMPTON	7.80	17.85	8.20	16.51	12.83	1.99	14.07	20.94
ESSEX COUNTY	8.43	16.93	4.56	13.07	11.87	-1.19	17.16	25.17
EVERETT	7.07	23.43	5.57	20.01	6.85	0.98	13.56	22.43

Retirement System	1992 Return	1991 Return	1990 Return	1989 Return	1988 Return	1987 Return	1986 Return	1985 Return
FAIRHAVEN	4.88	15.31	-1.44	16.59	13.29	4.19	9.68	21.53
FALL RIVER	5.91	22.01	6.14	18.03	6.41	1.94	15.35	25.14
FALMOUTH	6.32	23.87	7.09	21.10	9.76	2.30	12.41	18.37
FITCHBURG	5.43	21.00	5.24	17.14	10.40	1.32	12.41	15.35
FRAMINGHAM	8.32	20.85	4.94	13.53	9.55	2.63	13.56	19.37
FRANKLIN COUNTY	8.51	17.18	5.61	11.95	9.51	-0.24	7.73	18.34
GARDNER	4.82	15.13	-1.22	16.97	13.41	3.16	12.94	19.45
GLOUCESTER	9.17	18.15	3.89	13.23	13.68	-0.45	16.57	25.69
GREATER LAWRENCE	8.02	18.70	3.80	11.36	8.13	1.71	7.28	7.69
GREENFIELD	10.33	18.23	5.92	15.28	8.34	0.30	13.19	17.23
HAMPDEN COUNTY	8.70	18.05	2.24	15.12	11.37	2.03	13.89	20.78
HAMPSHIRE COUNTY	7.75	15.24	4.88	14.16	8.25	4.40	11.73	17.17
HAVERHILL	9.19	20.32	1.30	13.43	13.40	2.87	16.80	22.71
HINGHAM	4.78	14.23	-1.32	14.69	10.89	0.95	15.32	22.28
HOLYOKE	8.60	18.50	3.50	13.13	12.85	4.23	14.15	27.88
HULL	7.93	15.01	3.23	9.39	9.79	0.57	11.36	17.28
LAWRENCE	2.03	27.20	3.22	19.04	5.44	-2.18	12.24	23.67
LEOMINSTER	6.67	17.39	5.19	13.93	10.03	2.47	12.21	19.64
LEXINGTON	8.20	24.85	2.05	13.48	9.57	-0.91	15.67	25.47
LOWELL	7.94	16.60	1.39	11.92	7.32	3.74	14.50	20.21
LYNN	1.39	33.49	0.12	17.50	11.62	-1.95	12.20	23.66
MALDEN	2.87	36.08	0.21	20.33	11.98	-2.94	9.38	22.27
MARBLEHEAD	2.04	35.37	0.81	18.96	10.61	-3.24	7.88	21.90
MARLBOROUGH	8.54	18.05	4.21	14.08	14.11	-0.71	9.91	21.89
MASS HOUSING FINA	4.80	15.28	-1.67	16.84	13.80	-0.90	9.39	9.58
MASS PORT AUTH	7.91	20.51	4.32	19.14	11.34	3.93	18.68	22.18
MASS TURNPIKE AUT	7.81	15.38	6.88	14.03	10.78	3.15	16.90	22.68

<u>Retirement System</u>	<u>1992 Return</u>	<u>1991 Return</u>	<u>1990 Return</u>	<u>1989 Return</u>	<u>1988 Return</u>	<u>1987 Return</u>	<u>1986 Return</u>	<u>1985 Return</u>
MASS WATER RESOUR	7.00	17.42	-1.02	14.60	10.66	6.32	5.78	N/A
MAYNARD	7.68	14.80	-3.33	5.94	7.72	1.10	9.91	27.80
MEDFORD	8.47	15.31	5.07	14.70	10.00	1.41	15.12	20.35
MELROSE	7.76	17.22	3.12	16.27	10.35	2.11	16.48	21.15
METHUEN	7.44	15.52	2.43	13.21	8.16	1.87	13.51	20.03
MIDDLESEX COUNTY	7.25	22.06	1.83	16.33	11.16	2.06	14.89	22.92
MILFORD	6.12	23.20	5.77	16.95	8.05	-4.86	8.98	19.66
MILTON	4.88	15.42	-1.59	16.88	13.49	4.46	10.93	22.53
MINUTEMAN REG VO	4.89	14.70	-1.55	16.90	13.87	4.49	22.05	13.17
MONTAGUE	4.86	15.68	-1.34	16.39	13.56	4.86	9.15	13.28
NATICK	9.03	21.50	3.47	17.21	10.91	-0.09	14.56	25.80
NEEDHAM	4.78	15.32	-1.55	16.84	13.83	4.67	20.76	19.58
NEW BEDFORD	6.03	20.95	-3.36	10.07	8.04	-6.31	13.68	21.48
NEWBURYPORT	5.98	21.03	5.07	13.61	10.32	-1.62	9.18	20.08
NEWTON	8.23	22.80	-4.57	16.02	13.60	-3.83	14.33	22.46
NORFOLK COUNTY	4.82	15.08	-1.16	16.62	13.42	4.14	17.47	23.77
NORTH ADAMS	3.96	31.57	2.31	19.79	9.31	-2.33	9.84	23.80
NORTH ATTLEBORO	5.86	18.19	3.07	15.93	9.60	0.57	12.66	17.64
NORTHAMPTON	3.70	32.38	2.24	18.12	11.28	-6.82	12.44	22.07
NORTHBRIDGE	4.92	15.30	-1.51	16.99	13.50	3.78	10.34	19.33
NORWOOD	6.84	14.96	6.60	17.01	11.22	2.83	13.30	17.17
PEABODY	8.56	17.96	3.01	13.43	12.77	-0.41	15.77	23.23
PITTSFIELD	8.66	17.85	4.79	15.12	9.54	-1.81	13.05	24.07
PLYMOUTH	7.49	24.77	6.89	16.18	8.33	-2.04	15.73	28.32
PLYMOUTH COUNTY	8.92	18.49	4.08	12.83	10.46	-1.30	16.71	24.66
PRIM BOARD	4.77	14.69	-2.27	17.90	13.43	3.25	19.94	22.76
QUINCY	9.14	19.07	4.09	13.43	6.36	-4.66	13.30	18.62

<u>Retirement System</u>	<u>1992 Return</u>	<u>1991 Return</u>	<u>1990 Return</u>	<u>1989 Return</u>	<u>1988 Return</u>	<u>1987 Return</u>	<u>1986 Return</u>	<u>1985 Return</u>
READING	4.87	15.43	-1.67	16.91	11.71	-2.77	10.73	26.85
REVERE	7.42	15.65	3.71	8.79	9.26	2.40	9.66	14.44
SALEM	6.92	18.73	3.31	12.86	7.39	2.99	14.57	19.46
SAUGUS	5.00	14.94	-1.32	16.55	13.50	3.98	11.50	14.53
SHREWSBURY	4.80	15.19	-1.68	16.87	13.81	4.42	19.33	17.28
SOMERVILLE	5.91	20.13	0.94	13.07	10.79	-7.08	13.14	29.94
SOUTHBRIDGE	9.07	17.76	3.55	6.77	7.82	-2.85	16.06	23.91
SPRINGFIELD	7.25	22.90	5.76	19.93	8.54	-1.18	14.91	20.45
STATE	5.53	18.10	0.44	15.70	12.67	1.89	16.17	24.10
STATE TEACHERS	6.14	18.53	1.95	15.64	12.54	0.96	16.03	24.01
STONEHAM	7.89	17.15	3.41	16.13	8.63	2.37	16.38	23.69
SWAMPSCOTT	2.09	30.22	2.37	18.93	14.25	-3.90	10.87	27.94
TAUNTON	8.26	18.85	5.49	16.83	10.64	6.06	20.07	23.41
WAKEFIELD	4.82	15.11	-1.48	16.04	13.34	4.43	21.13	19.76
WALTHAM	8.17	21.82	4.46	20.97	7.18	1.40	16.65	22.20
WATERTOWN	6.23	18.10	0.21	13.10	12.25	1.29	12.23	19.89
WEBSTER	3.94	17.65	-0.92	5.43	7.10	3.36	13.46	19.71
WELLESLEY	8.96	25.78	2.66	17.64	12.46	3.23	17.91	22.73
WEST SPRINGFIELD	8.73	18.34	4.30	16.51	10.63	1.07	11.20	15.79
WESTFIELD	8.87	18.66	5.11	16.86	8.11	0.77	15.59	20.29
WEYMOUTH	4.69	15.48	-1.49	16.69	13.33	4.53	20.02	28.19
WINCHESTER	9.29	18.58	5.51	15.75	9.62	0.01	15.27	22.77
WINTHROP	7.87	19.91	3.41	16.58	10.05	-0.24	14.67	18.51
WOBURN	8.66	15.86	5.62	13.06	8.56	-0.50	21.69	32.44
WORCESTER	7.98	15.11	1.56	14.39	12.22	1.78	15.81	19.25
WORCESTER COUNTY	7.87	16.21	3.72	10.30	8.59	1.40	16.05	27.06

PART II:

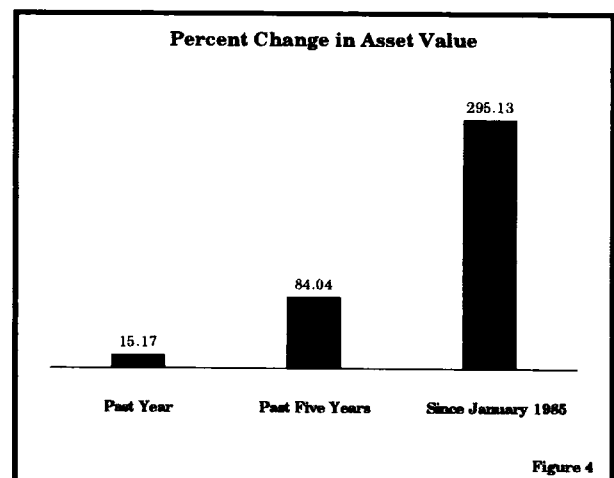
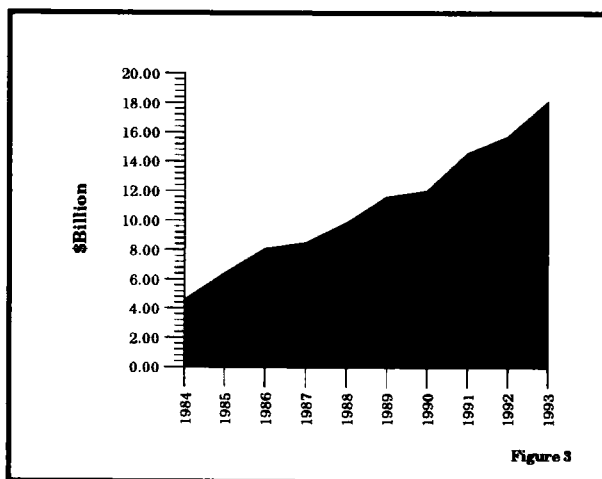
ASSET GROWTH

The starting point for analyzing the fiscal condition of our retirement systems is the market value of assets. On December 31, 1984 assets totaled \$4.6 billion. As of December 31, 1993, that total was \$18.06 billion, an increase of 295.13%. (See figures 3 and 4). The table that follows contains the assets of each of the retirement systems as of December 31, 1993 as well as the growth in assets over the past year, past five years, and past nine years.

Asset growth is a result of several factors. As the demographics of the workforce changes, employee contributions increase. Certain reversions to the pension reserve fund and assessments also increase system assets. However, over the long term the amount of system assets will be determined by investment activity and appropriation methodology.

It is obvious that investment return is the single most important source of asset growth, however, it should be noted that in the context of actuarial based funding, actuarial asset growth is distinguishable from gross asset growth. Actuarial asset growth is the extent to which the increase in assets exceeds the rate of increase assumed by the actuary. If real asset growth falls below the assumed rate, an actuarial asset loss takes place even though in gross terms assets in fact increased.

Integrating this concept of actuarial asset growth with changes in financing methods due to appropriations based on funding schedules which authorize use of assets to pay benefits, annual asset growth from all sources must exceed not only the assumed rate of return but must also compensate for assets used to pay benefits. Failure to achieve this level of increase will result in a depletion of assets and higher levels of appropriations.



**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1993**

Table Three

Asset Growth

Page One

Retirement System	December 31, 1993		Percent Change.....					
	Total Asset Value		Past Year		Past Five Years		Since January 1, 1985	
	Market	Rank	Percent	Rank	Percent	Rank	Percent	Rank
ADAMS	8,037,352.05	95	10.89	70	87.94	49	308.04	13
AMESBURY	13,364,661.89	88	3.96	104	86.73	54	289.35	22
ANDOVER	25,110,685.43	63	1.53	106	96.68	31	322.66	11
ARLINGTON	58,689,539.35	31	9.26	82	71.58	75	201.64	71
ATHOL	5,739,592.13	101	4.44	102	75.61	72	209.65	66
ATTLEBORO	23,094,957.36	69	11.10	65	87.34	53	238.46	50
BARNSTABLE COUNTY	113,264,651.81	15	17.14	18	119.57	7	282.17	28
BELMONT	26,728,175.69	61	10.05	77	68.17	77	158.97	98
BERKSHIRE COUNTY	32,397,547.72	54	16.44	26	101.58	22	277.85	30
BEVERLY	28,254,098.69	59	9.52	78	60.86	88	179.32	86
BLUE HILLS REG VO	3,413,047.34	106	10.13	76	53.47	97	167.16	95
BOSTON	1,472,033,853.54	4	15.33	37	94.72	36	247.39	42
BRAINTREE	42,745,306.59	42	8.97	85	58.48	90	297.45	18
BRISTOL COUNTY	95,289,137.28	17	13.89	45	100.27	26	240.50	48
BROCKTON	84,775,140.44	20	18.33	12	51.69	103	170.05	94
BROOKLINE	77,587,024.18	23	11.08	66	101.08	23	211.89	63
CAMBRIDGE	178,700,398.67	6	18.52	11	85.46	58	244.06	46
CHELSEA	22,827,675.62	71	7.24	93	63.78	86	172.61	91
CHICOPEE	52,452,651.30	33	14.06	42	79.66	64	171.97	92
CLINTON	6,923,225.37	97	13.78	46	65.75	83	177.25	88
CONCORD	27,269,593.69	60	49.71	1	171.53	1	354.14	5
DANVERS	34,195,431.87	48	12.82	54	90.71	43	198.45	77
DEDHAM	18,666,053.94	77	22.46	5	94.27	37	247.44	41
DUKES COUNTY	9,803,288.14	94	23.53	4	133.84	3	294.62	19
EASTHAMPTON	10,432,415.05	93	12.42	57	107.01	13	346.70	7
ESSEX COUNTY	81,439,130.46	21	16.62	23	101.73	21	243.61	47
EVERETT	34,140,853.92	49	16.09	28	87.67	52	158.76	99

Retirement System	December 31, 1993 Total Asset Value		Percent Change.....					
	Market	Rank	Past Year Percent	Rank	Past Five Years Percent	Rank	Since January 1, 1985 Percent	Rank
FAIRHAVEN	7,922,865.24	96	15.82	30	82.35	60	213.23	61
FALL RIVER	95,148,808.16	18	8.76	87	95.69	34	273.28	33
FALMOUTH	22,292,205.25	73	7.81	91	156.27	2	347.62	6
FITCHBURG	34,065,747.33	50	7.48	92	76.46	69	244.10	45
FRAMINGHAM	58,957,711.48	30	15.43	36	103.76	16	270.12	34
FRANKLIN COUNTY	18,374,593.91	78	14.90	38	92.39	41	247.19	43
GARDNER	11,459,152.89	91	4.23	103	52.21	102	170.30	93
GLOUCESTER	24,364,962.32	66	9.27	81	76.01	70	233.99	54
GREATER LAWRENCE	3,789,598.17	105	13.77	47	100.44	25	249.70	39
GREENFIELD	14,234,531.55	87	16.26	27	117.11	8	287.38	24
HAMPDEN COUNTY	79,527,236.17	22	16.51	25	100.82	24	262.59	38
HAMPSHIRE COUNTY	50,263,451.46	36	18.22	13	102.26	19	232.15	57
HAVERHILL	58,417,972.13	32	12.34	59	102.84	18	328.00	10
HINGHAM	17,558,767.45	83	18.58	10	78.44	65	183.29	84
HOLYOKE	60,522,857.94	29	19.73	6	66.57	82	204.85	68
HULL	6,124,792.56	100	-1.18	107	43.00	106	119.39	106
LAWRENCE	50,356,690.23	35	5.88	99	72.48	73	194.74	79
LEOMINSTER	24,758,161.34	64	15.66	34	89.85	44	265.99	36
LEXINGTON	34,962,476.02	47	12.18	60	81.46	61	248.69	40
LOWELL	61,944,002.83	28	8.10	90	58.35	91	162.44	97
LYNN	85,364,318.31	19	6.04	98	54.53	96	232.62	56
MALDEN	41,514,898.14	44	9.42	79	89.49	46	185.26	83
MARBLEHEAD	24,257,698.91	67	10.21	75	121.35	5	200.59	75
MARLBOROUGH	22,478,192.54	72	14.61	40	96.09	32	282.59	27
MASS HOUSING FINA	18,171,517.99	79	19.02	8	120.10	6	298.35	16
MASS PORT AUTH	132,591,240.48	12	12.98	52	107.50	11	298.23	17
MASS TURNPIKE AUT	98,280,199.58	16	9.08	83	85.63	57	298.97	15

Retirement System	December 31, 1993		Percent Change.....					
	Total Asset Value	Rank	Past Year		Past Five Years		Since January 1, 1985	
	Market	Rank	Percent	Rank	Percent	Rank	Percent	Rank
MASS WATER RESOUR	29,066,407.32	57	35.58	2	N/A	N/A	N/A	N/A
MAYNARD	6,151,141.49	99	16.98	19	62.88	87	175.27	89
MEDFORD	50,480,040.67	34	11.23	64	76.93	68	231.40	58
MELROSE	21,012,429.13	74	12.65	56	47.15	105	151.00	103
METHUEN	28,804,133.56	58	15.82	31	110.86	9	335.16	9
MIDDLESEX COUNTY	301,403,620.94	5	14.53	41	102.04	20	274.47	32
MILFORD	18,122,428.89	80	10.93	68	107.09	12	289.91	20
MILTON	24,548,038.71	65	17.82	14	66.94	81	210.93	64
MINUTEMAN REG VO	3,350,302.38	107	19.38	7	109.01	10	520.37	2
MONTAGUE	5,047,444.14	103	15.87	29	89.38	47	212.32	62
NATICK	32,676,005.68	53	3.43	105	75.85	71	239.92	49
NEEDHAM	41,537,108.71	43	15.79	32	67.31	80	312.52	12
NEW BEDFORD	73,727,984.40	24	15.44	35	56.21	95	175.04	90
NEWBURYPORT	13,040,189.84	89	13.06	50	98.56	28	281.82	29
NEWTON	122,350,434.24	13	11.53	62	53.27	99	132.49	105
NORFOLK COUNTY	176,214,440.00	7	18.64	9	87.99	48	245.59	44
NORTH ADAMS	14,653,542.80	86	11.50	63	104.62	15	266.13	35
NORTH ATTLEBORO	16,004,590.42	84	12.38	58	89.50	45	283.09	26
NORTHAMPTON	17,801,831.53	82	10.63	73	99.51	27	200.23	76
NORTHBRIDGE	4,387,176.08	104	12.77	55	47.97	104	156.73	100
NORWOOD	47,515,686.15	38	13.00	51	91.27	42	288.39	23
PEABODY	47,541,172.08	37	9.04	84	76.94	67	235.46	53
PITTSFIELD	44,404,139.70	40	14.01	43	80.55	62	187.99	82
PLYMOUTH	33,054,764.10	52	8.47	89	104.63	14	286.88	25
PLYMOUTH COUNTY	167,766,330.84	9	12.98	53	97.41	30	289.52	21
PRIM BOARD	4,511,238,692.26	3	23.66	3	87.72	51	811.72	1
QUINCY	113,881,747.07	14	13.20	49	87.81	50	204.51	69

Retirement System	December 31, 1993		Percent Change.....					
	Total Asset Value	Rank	Past Year		Past Five Years		Since January 1, 1985	
	Market	Rank	Percent	Rank	Percent	Rank	Percent	Rank
READING	22,956,241.14	70	17.74	15	93.68	38	225.18	59
REVERE	33,083,552.86	51	5.12	100	59.30	89	197.12	78
SALEM	38,706,478.12	45	7.13	94	57.75	92	201.04	73
SAUGUS	14,959,538.80	85	9.28	80	52.84	100	181.19	85
SHREWSBURY	18,100,285.33	81	13.93	44	70.91	76	233.41	55
SOMERVILLE	62,053,681.94	27	10.97	67	53.41	98	201.39	72
SOUTHBRIDGE	6,242,655.38	98	4.56	101	57.72	93	135.28	104
SPRINGFIELD	153,286,127.94	10	11.74	61	92.59	39	202.35	70
STATE	5,801,531,949.89	2	16.54	24	79.80	63	378.79	4
STATE TEACHERS	5,956,320,620.38	1	15.70	33	85.95	55	301.79	14
STONEHAM	20,070,321.02	75	6.13	97	64.20	85	210.42	65
SWAMPSCOTT	12,360,525.58	90	16.76	21	95.01	35	237.48	52
TAUNTON	44,737,461.30	39	14.87	39	92.51	40	275.83	31
WAKEFIELD	24,109,553.18	68	17.29	16	65.40	84	190.73	80
WALTHAM	65,521,176.86	25	6.92	95	72.41	74	218.82	60
WATERTOWN	31,552,001.72	55	6.45	96	78.24	66	200.94	74
WEBSTER	5,555,473.04	102	10.64	71	82.66	59	155.06	101
WELLESLEY	64,599,904.14	26	16.72	22	98.45	29	492.51	3
WEST SPRINGFIELD	19,091,671.16	76	10.64	72	103.49	17	154.14	102
WESTFIELD	43,348,334.98	41	17.20	17	124.84	4	338.78	8
WEYMOUTH	36,876,855.35	46	16.87	20	67.69	78	189.20	81
WINCHESTER	26,090,074.69	62	10.43	74	95.86	33	264.32	37
WINTHROP	10,589,479.12	92	13.54	48	57.15	94	163.03	96
WOBURN	30,599,443.94	56	10.91	69	85.83	56	237.52	51
WORCESTER	175,903,214.79	8	8.70	88	52.41	101	177.98	87
WORCESTER COUNTY	141,163,634.10	11	8.85	86	67.34	79	209.28	67
MASS. RETIREMENT SYSTEMS	18,059,033,527.52		15.17		84.04		295.13	

PART III:

FEES AND TURNOVER

This part of the report focuses attention on the expenses involved in the activity of the boards. The responsibility for day to day management of the portfolio is delegated to professional money managers. PERA requires that such managers meet strict standards. In addition, custody costs and consultant fees are incurred in the normal course of investing by retirement boards. These costs may be paid from investment earnings or paid from appropriations. The return of those systems paying expenses from earnings is reduced by such costs. However, nationwide and in Massachusetts the use of investment earnings is the most common method of paying for these costs. Table Four contains the gross returns of the retirement systems and the net returns of the retirement systems after expenses have been paid from earnings. Following the gross and net returns are the amounts paid for management advice, custody costs and consultant fees. In evaluating these costs, PERA is seeking to make systems aware of the impact of expenses on real returns. Boards should keep this in mind when negotiating contracts with various vendors.

The same is true in analyzing the turnover in a portfolio. Turnover rates must be judged based on the performance of the portfolio. High turnover rates increase trading costs, consequently, a high level of buying and selling must be justified by performance. As a general principle, such turnover does not enhance performance, however, each manager must be assessed on his or her performance. Table Five contains turnover rates of the stock and bond portfolios of the retirement systems.

Please note:

- The administrative expenses of the PRIT Fund have been categorized as management fees. The adjusted fees of the PRIT Fund, which exclude administrative expenses, represent .43% of the portfolio.**
- The Investment Committee of the State Treasurer administers the MASTERS Trust for the State Employees' and Teachers' Retirement Systems. The gross return as reported by the Office of the Treasurer was 13.62% and the net return 13.53%, a difference of 9 basis points. These returns differ from those reported for the State Employees' and Teachers' Retirement Systems because they exclude the funds invested by these retirement systems with the PRIT Fund. In addition, the MASTERS Trust pays for administrative and other operating expenses from earnings which is reflected in a lower net return for the State Employees' and Teachers' Retirement Systems than if they had not been paid from earnings.**

- The administrative expenses and other operating expenses of the MASTERS Trust have been categorized as management fees for the State Employees' and Teachers' Retirement Systems. The adjusted fees of the State Employees' and Teachers' Retirement Systems, adjusted for the administrative and other operating expenses of the PRIT Fund and the MASTERS Trust, represent .27% and .24% of the portfolios, respectively.
- Management fees for those retirement systems which use BayBank and U.S. Trust as manager and custodian include custody fees.
- Information regarding expenses was derived from the records of the retirement systems, the PRIT Fund and the Office of the Treasurer.
- With respect to systems investing in shares of mutual funds, limited partnerships, group trusts, etc., the turnover data reflects the purchase and redemption of units and does not reflect the buying and selling of stocks and bonds.

Statewide in 1993, the gross return was 12.88% and the net return 12.52%, a difference of 36 basis points. Statewide, \$44,557,960 was paid in management fees, \$5,482,377 was paid in custody fees, and \$1,456,534 was paid in consulting fees (adjusted to exclude administrative and operating costs.)

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1993**

Table Four **Gross and Net Performance / Management, Custodian Bank and Consultant Fees** **Page One**

Retirement System	..... Gross and Net Performance .....			.....Management, Custodian Bank and Consultant Fees			
	Gross	Net	Basis Point Difference	Management Fees	Custodian Bank Fees	Consultant Fees	As a % of Market Value
ADAMS	9.19	8.89	30	21,484.00	7,726.24	0.00	0.36
AMESBURY	12.12	11.95	17	19,855.11	12,408.84	10,027.35	0.32
ANDOVER	2.91	2.68	23	55,000.00	17,050.00	0.00	0.29
ARLINGTON	9.83	9.67	16	18,780.71	23,707.78	42,453.41	0.14
ATHOL	6.48	6.13	35	18,298.60	6,045.48	0.00	0.42
ATTLEBORO	10.44	10.20	24	47,581.48	0.00	0.00	0.21
BARNSTABLE COUNTY	9.21	8.75	46	450,368.19	12,430.00	10,055.00	0.42
BELMONT	11.45	10.88	57	134,640.24	23,749.80	9,781.49	0.63
BERKSHIRE COUNTY	11.35	11.22	13	30,475.83	10,355.07	74.51	0.13
BEVERLY	9.47	8.83	64	106,191.21	33,534.71	21,000.00	0.57
BLUE HILLS REG VO	11.41	10.72	69	20,606.37	0.00	0.00	0.60
BOSTON	13.74	13.41	33	3,447,891.41	755,408.29	64,000.00	0.29
BRAINTREE	7.94	7.53	41	158,776.71	33,936.77	0.00	0.45
BRISTOL COUNTY	10.35	10.11	24	207,358.13	0.00	0.00	0.22
BROCKTON	18.10	17.55	55	378,193.77	76,505.90	30,875.00	0.57
BROOKLINE	12.41	11.96	45	243,212.81	41,913.60	16,037.49	0.39
CAMBRIDGE	13.33	12.78	55	858,957.27	4,294.81	9,250.00	0.49
CHELSEA	11.05	10.71	34	69,255.17	0.00	0.00	0.30
CHICOPEE	13.09	12.57	52	222,019.83	44,431.07	0.00	0.51
CLINTON	11.17	11.11	6	3,211.73	0.00	0.00	0.05
CONCORD	11.57	11.27	30	69,603.11	11,609.27	178.68	0.30
DANVERS	11.97	11.97	0	82,271.14	10,000.00	0.00	0.27
DEDHAM	16.08	15.46	62	82,750.76	4,051.86	1,591.20	0.47
DUKES COUNTY	10.50	10.48	2	19,251.38	0.00	0.00	0.20
EASTHAMPTON	8.37	7.96	41	40,000.00	0.00	9,500.00	0.47
ESSEX COUNTY	11.40	11.01	39	273,547.00	38,537.68	6,000.00	0.39
EVERETT	12.24	11.98	26	75,348.54	0.00	0.00	0.22

Retirement System	..... Gross and Net Performance .....			.....Management, Custodian Bank and Consultant Fees			
	Gross	Net	Basis Point Difference	Management Fees	Custodian Bank Fees	Consultant Fees	As a % of Market Value
FAIRHAVEN	15.70	15.10	60	34,852.68	1,706.55	670.18	0.47
FALL RIVER	11.28	11.08	20	177,114.00	0.00	0.00	0.19
FALMOUTH	4.32	4.01	31	66,047.39	0.00	0.00	0.30
FITCHBURG	7.32	7.32	0	58,560.75	0.00	0.00	0.17
FRAMINGHAM	14.57	14.16	41	193,705.46	2,791.92	1,096.41	0.34
FRANKLIN COUNTY	10.71	10.30	41	64,816.00	0.00	0.00	0.35
GARDNER	15.94	15.34	60	54,898.92	2,688.10	1,055.64	0.51
GLOUCESTER	11.28	10.63	65	122,295.21	15,775.41	5.43	0.57
GREATER LAWRENCE	10.70	10.04	66	21,730.92	0.00	0.00	0.57
GREENFIELD	12.06	12.02	4	61,384.60	11,450.51	10,421.75	0.58
HAVERHILL	9.68	8.97	71	320,101.47	44,195.93	0.00	0.62
HINGHAM	15.64	15.04	60	77,775.49	3,808.25	1,495.53	0.47
HOLYOKE	11.63	11.24	39	193,057.00	20,328.41	0.00	0.35
HAMPDEN COUNTY	11.48	11.09	39	264,385.57	19,375.00	0.00	0.36
HAMPSHIRE COUNTY	13.99	13.53	46	156,027.40	28,707.11	35,848.44	0.44
HULL	8.12	7.70	42	24,411.44	1,380.00	0.00	0.42
LAWRENCE	11.91	11.45	46	196,578.00	8,700.00	0.00	0.41
LEOMINSTER	8.83	8.83	0	35,000.00	15,625.00	0.00	0.20
LEXINGTON	10.17	9.69	48	131,665.84	17,500.00	0.00	0.43
LOWELL	8.10	7.56	54	246,051.28	38,069.56	30,695.82	0.51
LYNN	8.50	8.19	31	223,533.00	20,676.01	0.00	0.29
MASS TURNPIKE AUT	7.86	7.75	11	31,350.00	29,775.05	36,000.00	0.10
MALDEN	9.12	8.83	29	110,033.00	9,716.42	0.00	0.29
MARBLEHEAD	8.97	8.64	33	67,015.70	8,283.04	1,655.97	0.32
MARLBOROUGH	11.34	10.88	46	76,873.00	13,534.19	12,000.00	0.46
MAYNARD	11.55	11.14	41	20,775.43	0.00	0.00	0.34
MEDFORD	10.09	9.61	48	154,144.81	21,712.67	38,946.73	0.43

Retirement System	..... Gross and Net Performance .....			.....Management, Custodian Bank and Consultant Fees			
	Gross	Net	Basis Point Difference	Management Fees	Custodian Bank Fees	Consultant Fees	As a % of Market Value
MELROSE	12.09	11.78	31	59,509.87	8,163.48	0.00	0.32
METHUEN	11.51	11.51	0	83,846.16	10,422.97	0.00	0.33
MASS HOUSING FINA	11.89	11.57	32	47,600.73	9,709.74	386.44	0.32
MIDDLESEX COUNTY	13.49	12.83	66	1,424,295.13	198,463.59	67,500.00	0.56
MILFORD	11.59	11.59	0	40,536.63	0.00	0.00	0.22
MILTON	16.01	15.40	61	109,988.89	5,385.56	2,114.96	0.48
MINUTEMAN REG VO	15.91	15.30	61	14,697.61	719.66	282.62	0.47
MONTAGUE	15.67	15.08	59	21,727.96	1,063.90	417.80	0.46
MASS PORT AUTH	10.71	10.71	0	95,165.82	38,484.66	0.00	0.10
MASS WATER RESOUR	12.10	11.75	35	80,027.91	115.14	45.22	0.28
NATICK	8.02	7.78	24	58,003.91	16,112.64	0.00	0.23
NEEDHAM	15.90	15.29	61	188,026.65	9,206.65	3,615.53	0.48
NEW BEDFORD	9.14	8.68	46	282,161.52	1,090.05	15,428.07	0.41
NEWTON	15.08	14.48	60	487,488.26	83,903.22	34,635.25	0.50
NORFOLK COUNTY	14.55	13.97	58	759,610.09	41,826.56	13,950.23	0.46
NORWOOD	11.39	11.26	13	41,558.67	11,312.50	0.00	0.11
NORTH ADAMS	8.27	7.85	42	49,350.00	6,451.06	0.00	0.38
NORTH ATTLEBORO	10.50	10.19	31	41,924.01	9,479.94	8,849.19	0.38
NORTHBRIDGE	16.01	15.39	62	20,316.44	994.79	390.66	0.49
NORTHAMPTON	7.89	7.48	41	56,164.00	13,309.15	0.00	0.39
NEWBURYPORT	11.98	11.61	37	33,626.47	10,000.00	0.00	0.33
PEABODY	12.54	12.09	45	162,694.00	21,378.88	0.00	0.39
PLYMOUTH COUNTY	8.04	8.01	3	39,020.00	34,850.29	0.00	0.04
PLYMOUTH	3.30	2.92	38	117,376.26	0.00	15,550.00	0.40
PRIM BOARD	16.31	15.71	60	19,462,495.40	952,973.64	374,241.12	0.46
PITTSFIELD	11.58	11.14	44	156,004.00	12,500.00	0.00	0.38
QUINCY	10.66	10.32	34	346,665.38	40,276.61	120.66	0.34

Retirement System	..... Gross and Net Performance .....			.....Management, Custodian Bank and Consultant Fees			
	Gross	Net	Basis Point Difference	Management Fees	Custodian Bank Fees	Consultant Fees	As a % of Market Value
READING	15.96	15.34	62	100,896.81	4,940.37	1,940.13	0.47
REVERE	7.81	7.81	0	82,917.22	29,998.59	0.00	0.34
SALEM	10.66	10.17	49	171,600.41	29,018.96	0.00	0.52
SAUGUS	15.80	15.20	60	69,183.11	3,387.52	1,330.31	0.49
SHREWSBURY	11.42	10.78	64	82,294.62	2,418.41	14,027.42	0.55
SOMERVILLE	9.76	9.48	28	143,248.98	9,185.68	0.00	0.25
SPRINGFIELD	11.46	11.12	34	258,759.05	177,510.29	30,000.00	0.30
STATE TEACHERS	13.86	13.52	34	14,543,306.21	1,458,385.46	295,246.38	0.27
STATE	14.85	14.48	37	15,557,779.23	1,396,727.97	312,140.26	0.30
SOUTHBRIDGE	12.92	12.45	47	25,957.00	8,717.20	0.00	0.56
STONEHAM	8.10	7.29	81	150,788.78	15,871.58	15,769.32	0.91
SWAMPSCOTT	10.42	10.42	0	27,625.00	9,127.00	0.00	0.30
TAUNTON	13.02	12.59	43	153,495.69	4,438.75	9,500.00	0.37
WAKEFIELD	15.84	15.22	62	107,668.15	5,271.93	2,070.33	0.48
WALTHAM	11.21	11.21	0	130,559.98	0.00	0.00	0.20
WATERTOWN	10.96	10.52	44	111,402.00	31,593.34	16,500.00	0.51
WEBSTER	8.36	8.35	1	865.79	762.22	18,800.00	0.37
WELLESLEY	18.07	17.91	16	240,875.68	41,716.63	59,865.00	0.53
WEYMOUTH	15.69	15.08	61	163,252.96	7,993.62	3,139.16	0.47
WINCHESTER	10.36	9.91	45	85,530.83	22,825.67	700.00	0.42
WINTHROP	13.52	13.33	19	17,653.70	24,827.90	0.00	0.40
WOBURN	11.36	11.01	35	93,626.00	25,322.57	0.00	0.39
WORCESTER	13.14	12.88	26	316,066.17	0.00	94,000.00	0.23
WORCESTER COUNTY	8.14	7.90	24	252,555.39	34,350.44	17,500.00	0.22
WEST SPRINGFIELD	7.75	7.49	26	52,055.70	14,900.00	0.00	0.35
WESTFIELD	13.96	13.36	60	213,431.00	34,368.30	0.00	0.57

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1993**

Table Five

Portfolio Turnover

Page One

Retirement System	Equity Turnover				Fixed Income Turnover			
	Total Purchases	% of Avg. Market Value	Total Sales	% of Avg. Market Value	Total Purchases	% of Beg. Market Value	Total Sales	% of Beg. Market Value
ADAMS	2,386,243.25	90.98	1,257,084.66	47.93	1,901,735.33	46.73	2,128,126.83	52.29
AMESBURY	1,351,083.98	25.51	738,496.11	13.95	1,456,213.39	22.28	2,466,131.20	37.74
ANDOVER	7,853,577.38	82.62	7,780,106.14	81.84	34,836,832.53	263.40	35,660,989.56	269.63
ARLINGTON	5,013,996.72	20.72	0.00	0.00	10,240,705.26	33.21	13,020,168.04	42.22
ATHOL	807,087.48	63.46	721,453.03	56.72	1,371,614.37	39.42	1,069,471.01	30.74
ATTLEBORO	3,986,762.72	51.98	2,783,022.44	36.28	12,362,323.87	103.58	11,468,117.82	96.09
BARNSTABLE COUNTY	41,502,667.35	83.78	44,702,528.89	90.24	94,487,941.04	237.32	90,893,177.32	228.29
BELMONT	2,391,839.54	15.30	2,122,512.52	13.58	11,630,821.60	124.53	12,203,518.63	130.66
BERKSHIRE COUNTY	7,797,356.37	150.08	2,646,190.05	50.93	6,419,788.58	26.96	10,101,028.34	42.43
BEVERLY	6,470,595.91	44.67	4,964,966.70	34.27	22,407,436.62	217.63	21,538,127.52	209.19
BLUE HILLS REG VO	97,567.10	7.95	83,291.56	6.79	1,741,814.96	93.98	1,717,147.48	92.65
BOSTON	361,689,993.34	43.66	265,056,081.04	32.00	1,020,480,095.61	285.64	991,962,894.13	277.66
BRAINTREE	4,587,784.01	62.20	4,344,384.84	58.90	26,682,075.04	116.26	24,050,315.24	104.80
BRISTOL COUNTY	12,796,521.43	53.89	11,639,226.63	49.02	60,641,020.80	115.47	47,490,789.83	90.43
BROCKTON	44,954,224.35	119.75	32,528,588.17	86.65	22,344,707.07	63.40	25,888,499.30	73.45
BROOKLINE	37,042,470.61	117.43	39,116,975.90	124.01	70,105,796.56	189.51	72,849,834.41	196.93
CAMBRIDGE	79,722,716.27	88.39	62,884,133.45	69.72	41,525,981.05	75.91	37,268,416.46	68.13
CHELSEA	5,361,117.17	64.28	4,099,842.23	49.16	11,241,861.49	89.80	11,457,632.13	91.53
CHICOPEE	18,577,268.21	76.34	18,549,080.35	76.22	17,158,820.07	112.10	13,140,395.25	85.85
CLINTON	300,000.00	4.82	222,588.58	3.58	0.00	0.00	118,371.50	100.01
CONCORD	2,642,793.89	30.34	9,253.49	0.11	3,900,852.01	43.70	3,514,726.91	39.37
DANVERS	3,455,211.49	24.33	2,120,614.09	14.93	5,251,156.85	31.84	4,571,832.19	27.72
DEDHAM	2,492,068.75	14.84	101,787.31	0.61	0.00	0.00	0.00	0.00
DUKES COUNTY	2,816,786.02	133.90	607,364.63	28.87	4,065,401.98	101.92	1,877,195.69	47.06
EASTHAMPTON	457,714.00	24.94	114,724.63	6.25	1,063,378.88	14.55	454,183.83	6.22
ESSEX COUNTY	25,924,468.44	79.21	25,150,124.86	76.84	34,578,713.69	125.44	31,021,600.87	112.54
EVERETT	8,552,898.55	58.64	7,024,025.45	48.16	14,328,979.31	93.43	12,849,769.95	83.79

Table Five

Portfolio Turnover

Page Two

Retirement System	Equity Turnover				Fixed Income Turnover			
	Total Purchases	% of Avg. Market Value	Total Sales	% of Avg. Market Value	Total Purchases	% of Beg. Market Value	Total Sales	% of Beg. Market Value
FAIRHAVEN	1,335,720.81	19.45	730,944.51	10.64	0.00	0.00	0.00	0.00
FALL RIVER	18,053,372.70	60.26	14,936,995.65	49.86	57,276,499.40	102.13	54,392,359.87	96.99
FALMOUTH	2,678,218.30	20.53	289,100.33	2.22	649,462.92	7.86	1,283,027.51	15.53
FITCHBURG	2,927,913.60	24.74	1,994,588.25	16.86	6,206,994.55	39.14	7,295,187.85	46.00
FRAMINGHAM	9,154,062.61	17.07	5,078,121.25	9.47	0.00	0.00	3,383.56	30.97
FRANKLIN COUNTY	5,504,890.01	77.03	4,858,288.07	67.98	7,731,310.48	96.89	6,270,439.37	78.58
GARDNER	2,030,434.26	19.16	1,094,892.91	10.33	0.00	0.00	0.00	0.00
GLOUCESTER	9,727,121.09	85.13	9,346,308.59	81.80	9,690,904.05	96.06	8,426,590.46	83.53
GREATER LAWRENCE	651,775.02	43.96	180,916.57	12.20	849,366.85	42.82	1,091,872.64	55.05
GREENFIELD	4,975,429.32	100.84	4,359,696.20	88.36	7,473,987.76	103.85	8,103,221.43	112.59
HAVERHILL	33,361,700.18	104.75	26,566,079.59	83.42	43,100,809.60	195.53	50,911,233.77	230.96
HINGHAM	2,627,774.73	16.61	743,775.65	4.70	0.00	0.00	0.00	0.00
HOLYOKE	21,851,224.42	80.53	19,029,689.75	70.13	26,446,493.98	111.37	21,996,176.79	92.63
HAMPDEN COUNTY	22,492,680.42	64.84	20,739,455.29	59.78	32,727,587.59	99.90	29,129,284.27	88.92
HAMPSHIRE COUNTY	8,454,046.75	33.18	6,372,316.28	25.01	6,904,624.45	42.24	5,028,852.68	30.76
HULL	397,056.30	40.34	124,095.29	12.61	3,118,752.67	72.12	2,857,984.63	66.09
LAWRENCE	21,677,003.30	119.26	22,401,556.27	123.24	92,252,296.58	342.67	89,898,813.48	333.93
LEOMINSTER	1,805,137.10	21.70	1,458,704.15	17.54	4,410,683.10	36.18	4,684,717.70	38.43
LEXINGTON	6,651,591.10	35.27	5,558,872.12	29.47	5,845,646.72	46.67	5,922,421.50	47.28
LOWELL	7,062,795.73	26.01	6,862,826.94	25.27	93,175,673.22	376.91	92,456,513.97	374.00
LYNN	28,165,889.87	56.66	19,681,996.40	39.60	5,644,212.50	17.15	11,167,669.07	33.94
MASS TURNPIKE AUT	10,335,984.81	96.34	6,000,000.00	55.93	32,213,968.61	56.99	8,790,415.92	15.55
MALDEN	14,403,256.02	65.80	10,008,439.38	45.72	5,141,464.76	29.84	6,831,209.29	39.65
MARBLEHEAD	7,763,467.20	62.50	6,862,844.95	55.25	2,641,493.25	27.39	3,912,347.90	40.57
MARLBOROUGH	7,417,346.06	98.82	7,541,582.45	100.48	11,782,734.94	98.53	9,760,397.77	81.62
MAYNARD	1,102,826.38	69.46	662,429.45	41.72	3,253,644.50	96.70	2,798,735.29	83.18
MEDFORD	6,366,554.08	35.74	7,485,155.56	42.02	10,469,164.45	48.27	6,340,482.34	29.23

Retirement System	..... Equity Turnover .....				..... Fixed Income Turnover			
	Total Purchases	% of Avg. Market Value	Total Sales	% of Avg. Market Value	Total Purchases	% of Beg. Market Value	Total Sales	% of Beg. Market Value
MELROSE	3,793,151.23	47.13	3,150,898.52	39.15	4,288,917.01	47.43	3,940,541.05	43.57
METHUEN	1,302,514.40	11.44	648,302.57	5.69	19,225,428.35	163.57	16,945,487.92	144.17
MASS HOUSING FINA	8,604,014.30	81.97	17,379,228.09	165.57	16,086,967.50	0.00	6,252,711.31	0.00
MIDDLESEX COUNTY	80,756,739.57	54.51	63,682,259.19	42.98	93,413,984.85	88.05	89,120,524.98	84.00
MILFORD	3,321,918.55	51.55	2,627,714.59	40.78	7,680,727.32	82.77	6,644,783.44	71.61
MILTON	3,866,129.28	17.15	1,582,834.11	7.02	0.00	0.00	0.00	0.00
MINUTEMAN REG VO	404,283.32	13.48	17,801.63	0.59	0.00	0.00	0.00	0.00
MONTAGUE	559,081.70	12.74	452,669.12	10.31	0.00	0.00	0.00	0.00
MASS PORT AUTH	21,542,833.92	38.30	13,979,049.02	24.85	33,912,666.20	59.36	30,318,643.49	53.07
MASS WATER RESOUR	12,887,547.91	139.59	2,513,471.45	27.22	19,312,108.82	179.12	21,884,708.45	202.98
NATICK	24,212,993.00	100.53	10,663,603.62	44.28	1,037,187.50	7.55	15,337,656.25	111.69
NEEDHAM	5,310,200.86	14.16	2,055,968.17	5.48	0.00	0.00	0.00	0.00
NEW BEDFORD	15,516,313.87	68.78	8,510,280.74	37.72	143,018,717.15	542.93	126,266,462.01	479.33
NEWTON	89,997,954.53	136.34	90,680,305.76	137.37	29,415,228.98	71.91	27,616,879.61	67.51
NORFOLK COUNTY	22,465,765.51	16.74	53,307,583.75	39.72	27,177,368.06	0.00	3,695,112.68	0.00
NORWOOD	2,526,532.58	15.28	165,407.74	1.00	5,701,753.32	22.33	3,640,404.00	14.26
NORTH ADAMS	4,534,314.73	60.71	3,183,948.45	42.63	3,840,542.75	68.61	3,771,558.57	67.38
NORTH ATTLEBORO	1,381,714.03	21.64	932,422.96	14.60	7,993,885.67	113.42	7,205,428.61	102.23
NORTHBRIDGE	749,129.88	18.15	485,271.77	11.75	0.00	0.00	0.00	0.00
NORTHAMPTON	5,987,725.38	64.94	4,670,274.11	50.65	3,156,980.25	46.99	2,833,586.96	42.18
NEWBURYPORT	1,201,258.90	22.33	868,690.89	16.15	2,845,196.89	47.50	2,335,703.92	38.99
PEABODY	15,714,444.36	74.23	16,713,157.03	78.95	20,533,445.32	97.60	19,370,815.29	92.08
PLYMOUTH COUNTY	37,386,081.99	78.34	8,653,530.56	18.13	1,630,138.28	1.96	40,741,748.14	49.05
PLYMOUTH	3,437,223.00	17.34	449,824.97	2.27	3,898,818.75	36.54	4,039,520.57	37.86
PRIM BOARD	1,187,784,075.89	44.00	966,064,565.33	35.78	1,762,956,683.99	173.03	1,580,363,964.42	155.11
PITTSFIELD	11,513,183.65	76.60	11,632,792.00	77.40	26,296,487.87	121.61	23,073,870.25	106.70
QUINCY	27,009,308.96	49.71	23,102,188.88	42.52	169,544,956.04	387.97	168,641,255.47	385.91

Retirement System	..... Equity Turnover .....				..... Fixed Income Turnover			
	Total Purchases	% of Avg. Market Value	Total Sales	% of Avg. Market Value	Total Purchases	% of Beg. Market Value	Total Sales	% of Beg. Market Value
READING	3,614,642.02	17.78	1,512,823.34	7.44	0.00	0.00	0.00	0.00
REVERE	6,455,189.30	70.54	3,671,542.80	40.12	10,294,861.13	59.18	9,910,860.47	56.97
SALEM	9,402,997.42	71.19	9,457,802.17	71.60	19,960,208.31	102.71	18,399,023.12	94.67
SAUGUS	1,676,737.15	11.88	1,275,011.20	9.03	0.00	0.00	0.00	0.00
SHREWSBURY	9,471,601.27	85.71	19,564,149.44	177.05	15,718,205.18	0.00	5,122,751.26	0.00
SOMERVILLE	27,298,735.52	105.94	17,104,516.74	66.38	19,448,131.51	130.33	15,514,582.15	103.97
SPRINGFIELD	28,592,893.17	49.43	27,092,113.74	46.84	52,380,641.99	68.59	47,174,772.27	61.78
STATE TEACHERS	962,399,678.76	17.68	367,412,030.68	6.75	0.00	0.00	0.00	0.00
STATE	722,436,486.64	13.47	282,311,914.40	5.26	0.00	0.00	0.00	0.00
SOUTHBRIDGE	2,220,829.50	75.75	2,341,302.14	79.86	2,497,199.95	85.14	2,520,972.84	85.95
STONEHAM	4,856,969.00	69.30	4,627,444.73	66.03	7,547,738.80	67.38	6,577,731.56	58.72
SWAMPSCOTT	3,933,955.95	78.89	2,624,964.52	52.64	1,965,779.50	31.81	2,731,501.26	44.19
TAUNTON	9,659,759.19	49.25	4,070,213.27	20.75	14,502,090.61	66.87	18,266,817.90	84.23
WAKEFIELD	4,090,621.73	18.60	1,881,146.48	8.55	0.00	0.00	0.00	0.00
WALTHAM	11,268,562.40	39.27	9,480,143.39	33.03	21,483,044.03	67.25	20,677,030.40	64.73
WATERTOWN	7,752,096.04	55.42	6,983,252.35	49.92	28,996,913.14	211.41	27,917,085.12	203.54
WEBSTER	337,717.31	8.46	865.79	0.02	0.00	0.00	7,176.87	31.65
WELLESLEY	29,641,556.35	80.93	28,884,935.66	78.87	32,973,265.49	180.08	33,174,732.76	181.18
WEYMOUTH	6,485,827.68	20.03	3,146,599.50	9.72	0.00	0.00	0.00	0.00
WINCHESTER	10,435,061.16	111.02	9,140,150.94	97.24	13,156,444.09	111.03	11,307,525.82	95.43
WINTHROP	5,229,490.00	123.73	3,555,178.26	84.11	3,360,262.14	58.52	5,926,681.76	103.21
WOBURN	344,169.50	4.40	379,049.97	4.85	23,374,104.27	121.30	20,310,128.43	105.40
WORCESTER	77,884,381.78	84.79	69,026,951.76	75.14	120,615,124.35	191.85	119,820,269.26	190.59
WORCESTER COUNTY	59,505,400.52	112.76	54,306,082.09	102.91	36,899,446.90	54.06	33,527,971.28	49.12
WEST SPRINGFIELD	5,246,549.30	75.85	4,104,246.04	59.34	4,465,544.73	43.75	3,700,433.69	36.25
WESTFIELD	22,189,430.24	100.34	18,810,129.29	85.06	15,866,271.38	123.99	14,786,576.44	115.56

PART IV:

INVESTMENT COUNSELORS, CONSULTANTS AND CUSTODIAN BANKS

The statute governing the investment of public pension funds enables boards to delegate day to day management responsibilities to professional investment managers. That delegation may take place only with authorization by PERA. This Division assesses the record and qualifications of the prospective manager and the board in an objective manner and does not substitute its judgment for that of the board.

Each manager generally must be a registered Investment Adviser pursuant to federal law. PERA, by regulation, also requires advisers to meet a Code of Ethics for Fiduciaries and Standards of Conduct for Investment Advisers.

In order to satisfy their fiduciary obligations, boards must employ a process in selecting firms which is similar to that which a prudent expert would employ. Furthermore, following selection that duty requires boards to formally monitor the manager's performance and take corrective action if necessary. Failure to follow this course of action could lead to a breach of fiduciary duty and personal liability for board members.

Many boards have retained investment consultants to assist in the selection and evaluation of money managers. Some firms also advise the boards in establishing investment objectives and determining asset allocations. The boards also have a fiduciary duty to use an objective, competitive process in the selection and retention of these firms. Once again, failure to fulfill that duty may subject board members to personal liability.

Custodian banks are retained by boards to monitor all financial transactions. Some banks also play a role in the cash management. Once again, failure to meet fiduciary duty in the selection and retention of these banks could result in personal liability for board members.

The information that follows lists those firms which provide management, consulting and custodian services to the boards. This information was taken from the records on file at PERA.

The selection and evaluation of competing firms has had an increasing impact on the investment performance of the retirement systems. Prudent decision-making in this important area will not only enable board members to avoid personal liability but will assure solid long term performance.

The following is a list of each retirement system and the investment counselor, consultant and custodian retained by each retirement system as of December 31, 1993.

ADAMS RETIREMENT SYSTEM

E.R. Taylor Investments (5/25/89)

Custodian: BayBank

AMESBURY RETIREMENT SYSTEM

Boston Financial Management, Inc. (4/17/85)

Bank of Ireland Asset Management (9/8/93)

Consultant: The Hannah Group

Custodian: State Street Bank

ANDOVER RETIREMENT SYSTEM

Harbor Capital Management Company, Inc. (12/31/93)

Custodian: State Street Bank

ARLINGTON RETIREMENT SYSTEM

Fleet Investment Advisors (3/5/85)

State Street Bank & Trust Company (2/6/92)

Consultant: Wilshire Associates

Custodian: State Street Bank

ATHOL RETIREMENT SYSTEM

Shawmut Bank, N.A. (6/25/85)

PaineWebber Properties III (12/22/88-real estate)

PaineWebber Independent Fund (8/8/89-real estate)

Custodian: Shawmut

ATTLEBORO RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (4/1/85)

PaineWebber Properties II (12/22/88-real estate)

PaineWebber Properties II (8/28/89-real estate)

Custodian: BayBank

BARNSTABLE COUNTY RETIREMENT SYSTEM

Aetna Capital Management (7/27/89)
Aetna Capital Management (7/27/89-real estate)
Aetna Capital Management (7/27/89-international equity)
U.S. Trust Asset Management (4/24/92)
Putnam Advisory Company (9/30/93)
Thompson, Siegel & Walmsley (9/30/93)

Consultant: William M. Mercer

Custodian: Bank of Boston

BELMONT RETIREMENT SYSTEM

Oppenheimer Capital (6/30/89)
Putnam Global Fixed Income (11/19/92)
Putnam International Equity Management (11/19/92)
The Belmont Retirement System purchased shares of the PRIT fund on 5/24/89.

Consultant: New England Pension Consultants

Custodian: BayBank

BERKSHIRE COUNTY RETIREMENT SYSTEM

Freedom Capital Management Corporation (7/7/93)
The Berkshire County Retirement System purchased shares of the PRIT fund on 2/23/87.

BEVERLY RETIREMENT SYSTEM

Aetna Capital Management (8/31/89)
Aetna Capital Management (8/31/89-real estate)
Aetna Capital Management (8/31/89-international equity)
PanAgora Asset Management-Asset Allocation Fund (6/24/92)
Munder Capital Management (10/8/92)
Income Research & Management (1/21/93)

Consultant: New England Pension Consultants

Custodian: State Street Bank

BLUE HILLS REGIONAL VOCATIONAL SCHOOL EMPLOYEES RETIREMENT SYSTEM

David L. Babson (4/12/85)

Custodian: Multibank (South Shore Bank)

BOSTON RETIREMENT SYSTEM

Wellington Management Company (2/21/85)
Eagle Asset Management (11/14/86)
Boston Company (PanAgora) (11/14/86)
Avatar Associates (11/14/86)
Bear Stearns, Inc. (2/4/87)
Oechsle International Advisors (6/30/87-international equity)
Warburg Investment Management International Ltd. (7/15/87- international equity)
State Street Bank & Trust Company (12/12/88)
Back Bay Advisors (9/7/89-fixed income)
Massachusetts Financial Services (9/7/89-fixed income)
Richmond Capital Management (9/7/89-fixed income)
Metric Institutional Realty-Metric Inst. Fund L.P. (9/7/89- real estate)
Criterion Investment Management (9/14/89-fixed income)
Heitman Advisory Corporation (11/17/89-real estate)
MIG Realty Advisors (12/19/89-real estate)
Shurgard Securities Corporation-Shurgard Inst. Fund L.P. II (5/11/90-real estate)
Acadian Asset Management (5/11/90-real estate)
Global Advisors (5/11/90-international fixed income)
Thomas H. Lee Equity Partners, L.P. (5/11/90-leveraged buyout)
BEA Associates, Inc. (4/25/91-international equity)
Schroder Real Estate Value-Enhancement Fund B, L.P. (5/5/92- real estate)
PCA Realty Advisors-Ruggles Center I (7/16/92-real estate)
New England Partners I, L.P.-New England Growth Fund I, L.P. (7/16/92-venture capital)
RhumbLine Advisers (5/25/93)
Zevenbergen Capital(5/25/93)
Target Investors, Inc. (9/29/93)
Thorsell Parker Partners (9/2/93)

Supplementary regulations were approved for the following:

Property Capital Advisors-real estate
LaSalle Advisors (Urban Site Venture and LaSalle Fund 3)- real estate
INVESCO Realty Advisors-real estate
Frank Russell Trust-real estate
Public Storage Inst. Fund II-real estate
Copley Partners I & II-venture capital

Consultant: SEI

Custodian: State Street Bank

BRAINTREE RETIREMENT SYSTEM

1838 Investment Advisors (9/9/86)

Custodian: BayBank

BRISTOL COUNTY RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (3/16/88-fixed income)

Aetna Capital Management (2/23/89-real estate)

BayBanks Investment Management, Inc. (7/5/89-equity)

A supplementary regulation was approved for the following:

Palmer Organization III L.P.-venture capital

Custodian: BayBank

BROCKTON RETIREMENT SYSTEM

Loomis Sayles - Fixed Income (6/7/89)

Freedom Capital Management Corporation (6/7/89)

Keystone Investment Management Corporation (3/1/90)

Lehndorff Babson-Fund III (5/11/90-real estate)

Bank of Ireland Asset Management (6/15/90-international equity)

Boston Capital Ventures II (11/26/91-venture capital)

Alliance Capital (3/24/93)

Consultant: Prime (Kidder Peabody)

Custodian: Boston Safe Deposit

BROOKLINE RETIREMENT SYSTEM

State Street Research (6/26/86)

State Street Research (8/24/89-international)

Loomis Sayles (1/28/93)

The Brookline Retirement System purchased shares of the PRIT fund on 9/30/89.

Consultant: Wyatt Asset Services, Inc.

Custodian: State Street Bank

CAMBRIDGE RETIREMENT SYSTEM

APT Financial Services (5/19/88-real estate)

Freedom Capital Management Corporation (11/9/90)

CAMBRIDGE RETIREMENT SYSTEM (cont'd)

Mutual of NY (11/9/90-fixed income)

Aetna Congregate Care Fund (11/9/90-real estate)

Wellington Management Company (11/9/90)

State Street Research & Management Company (11/9/90)

Bank of Ireland Asset Management (11/9/90-international equity)

Capital House Investment Management (2/25/92)

Shawmut Investment Advisers (7/16/93)

Consultant: Prime (Kidder Peabody)

Custodian: State Street Bank

CHELSEA RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (8/24/89)

Custodian: BayBank

CHICOPEE RETIREMENT SYSTEM

Freedom Capital Management Corporation (6/26/86)

Leonard Management Group (3/21/88)

State Street Research & Management Company (11/24/89)

Metric Inst. Realty Advisors (2/18/92-real estate)

(Metric Inst. Apt. Fund II, L.P.)

Met Life/State Street Research and Mgmt. Co. (11/27/91-equity)

(Capital Appreciation Acct.)

Metropolitan Life Insurance Company (11/27/91-real estate)

MassMutual Life Insurance Company (11/27/91-fixed income)

(MassMutual Participation Investors)

Custodian: BayBank

CLINTON RETIREMENT SYSTEM

Aetna Capital Management (2/14/91)

Aetna Capital Management (2/14/91-real estate)

Aetna Capital Management (2/14/91-international equity)

Consultant: The Helm Financial Services

CONCORD RETIREMENT SYSTEM

Fleet Investment Advisors (5/21/86)

Frank Russell Trust Company (5/21/86)

The Concord Retirement System purchased shares of the PRIT fund on 6/1/90.

Custodian: Fleet Bank

DANVERS RETIREMENT SYSTEM

Boston Financial Management, Inc. (4/3/85)

Custodian: State Street Bank

DEDHAM RETIREMENT SYSTEM

The Dedham Retirement System transferred to the PRIT fund on 6/30/88.

DUKES COUNTY RETIREMENT SYSTEM

Aetna Capital Management (3/7/91)

Aetna Capital Management (3/7/91-real estate)

Aetna Capital Management (3/7/91-international equity)

BayBanks Investment Management, Inc. (5/12/92)

Consultant: Wyatt Asset Services, Inc.

Custodian: BayBank

EASTHAMPTON RETIREMENT SYSTEM

Heritage Bank for Savings (4/12/85)

Wright Investors Service (10/13/93)

Custodian: Investors Bank and Trust/

Greenfield Savings Bank

ESSEX COUNTY RETIREMENT SYSTEM

Freedom Capital Management Corporation (5/6/85)

State Street Research & Management Company (1/4/90)

Consultant: Prime (Kidder Peabody)

Custodian: BayBank

EVERETT RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (2/15/85)

New England Growth Fund (6/30/93)

Custodian: BayBank

FAIRHAVEN RETIREMENT SYSTEM

The Fairhaven Retirement System transferred to the PRIT fund on 7/1/86.

FALL RIVER RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (8/27/85)

Custodian: BayBank

FALMOUTH RETIREMENT SYSTEM

State Street Bank & Trust Company (4/3/85)

Custodian: State Street Bank

FITCHBURG RETIREMENT SYSTEM

Safety Fund National Bank (4/19/85)

Custodian: Safety Fund National Bank

FRAMINGHAM RETIREMENT SYSTEM

State Street Research for Met. Life (10/17/90-South Africa Free Equity Fund)

State Street Research for Met. Life (10/17/90-Bond Fund)

GFM Int'l Investors, Ltd.-Met. Life (10/9/91-international fixed income)

The Framingham Retirement System purchased shares of the PRIT fund on 11/28/86.

FRANKLIN COUNTY RETIREMENT SYSTEM

Freedom Capital Management Corporation (3/31/88)

Metropolitan Life Market Plus (4/24/92-fixed income)

Custodian: State Street Bank

GARDNER RETIREMENT SYSTEM

The Gardner Retirement System transferred to the PRIT fund on 12/1/86.

GLOUCESTER RETIREMENT SYSTEM

Freedom Capital Management Corporation (4/19/85)

Custodian: BayBank

GREATER LAWRENCE SANITARY DISTRICT AUTHORITY RETIREMENT SYSTEM

Beacon Fiduciary Advisors, Inc. (5/23/90)

Custodian: University Bank and Trust

GREENFIELD RETIREMENT SYSTEM

PaineWebber Properties III (4/17/89-real estate)

Harbor Capital Management Company, Inc. (3/14/91)

Babson-Stewart Ivory International (9/30/93)

The Greenfield Retirement System purchased shares of the PRIT fund on 2/25/87.

Consultant: **The Hannah Group**

Custodian: **State Street Bank**

HAMPDEN COUNTY RETIREMENT SYSTEM

Freedom Capital Management Corporation (10/13/88)

Wellington Management Company (5/8/91)

Consultant: **PaineWebber**

Custodian: **BayBank**

HAMPSHIRE COUNTY RETIREMENT SYSTEM

Fleet Bank (4/11/85)

Fleet Investment Advisors (10/26/89)

Bank of Ireland Asset Management (12/12/90-international equity)

Lehndorff & Babson Property Fund IV (1/29/91)

Shurgard Institutional Fund L.P. II (1/29/92-real estate)

RhumbLine Advisers (2/25/92-equity)

Wellington Management Company (11/12/92)

Sentinel Realty Advisors (6/3/93)

Consultant: **The Hannah Group**

Custodian: **State Street Bank**

HAVERHILL RETIREMENT SYSTEM

The Boston Company (7/8/85)

Lehndorff & Babson Property Fund III (10/27/88-real estate)

Babson-Stewart Ivory (8/17/89-international equity)

E.R. Taylor Investments, Inc. (1/15/91-equity)

Phoenix Investment Counsel, Inc. (1/15/91-equity)

New England Partners I, L.P. (1/21/92-venture capital)

(New England Growth Fund I, L.P.)

Babson-Stewart Ivory Int'l (1/21/92-international equity)

(Babson-Stewart Ivory Int'l L.P.)

HAVERHILL RETIREMENT SYSTEM (cont'd)

BioVentures Ltd. Partn. (1/21/92-venture capital)

(Commonwealth BioVentures IV L.P.)

Shurgard Partners L.P. II (1/21/92-real estate)

(Shurgard Inst. Fund L.P. II)

Lehndorff & Babson Real Estate Counsel (1/21/92-real estate)

(Lehndorff & Babson Property Fund IV)

Scudder, Stevens & Clark (6/10/93)

Metric Inst. Realty Advisors (7/29/93)

Bank of Ireland Asset Management (8/5/93)

Consultant: The Hannah Group

Custodian: State Street Bank

HINGHAM RETIREMENT SYSTEM

The Hingham Retirement System transferred to the PRIT fund on 7/1/90.

HOLYOKE RETIREMENT SYSTEM

Freedom Capital Management Corporation (12/6/85)

Clemente Capital, Inc. (3/1/90-Freedom Global Fund and Freedom Environmental Fund)

Custodian: BayBank

HULL RETIREMENT SYSTEM

Capitol House Investment Management (10/16/90)

Custodian: State Street Bank

LAWRENCE RETIREMENT SYSTEM

National Investment Services of America, Inc. (1/24/86)

Custodian: BayBank

LEOMINSTER RETIREMENT SYSTEM

Safety Fund National Bank (4/1/85)

Custodian: Safety Fund National Bank

LEXINGTON RETIREMENT SYSTEM

Wellington Management Company (1/25/89)

Wellington Management Company (5/22/92-international equity)

Custodian: BayBank

LOWELL RETIREMENT SYSTEM

Shurgard Realty Advisors-Shurgard Inst. Fund L.P. (4/6/89- real estate)

J.L. Kaplan Associates (9/14/89-equity)

Shawmut Investment Advisers (9/14/89)

Metric Institutional Realty-Metric Apt. Fund (2/8/90-real estate)

Charles River Partnership VI-A (5/2/91-venture capital)

United States Trust Asset Management (5/22/91-equity)

Heitman Advisory Corporation (1/14/92-real estate)

(Heitman Real Estate Fund V)

Lehndorff & Babson (1/14/92-real estate)

(Lehndorff & Babson Property Fund IV)

New England Partners I, L.P. (2/19/92-venture capital)

(New England Growth Fund I, L.P.)

Bank of Ireland Asset Management (8/5/93)

The Lowell Retirement System purchased shares of the PRIT fund on 7/10/87.

Consultant: **The Hannah Group**

Custodian: **BayBank**

LYNN RETIREMENT SYSTEM

de Burlo Group (3/26/85)

A supplementary regulation was approved for the following:

Palmer Organization III L.P.-venture capital

Custodian: **BayBank**

MALDEN RETIREMENT SYSTEM

de Burlo Group (3/27/85)

Custodian: **State Street Bank**

MARBLEHEAD RETIREMENT SYSTEM

de Burlo Group (4/3/85)

Custodian: **BayBank**

MARLBOROUGH RETIREMENT SYSTEM

Freedom Capital Management Corporation (6/23/88)

Eaton Vance Management (9/15/93)

Consultant: **The Hannah Group**

Custodian: **BayBank**

MASSACHUSETTS HOUSING FINANCE AGENCY RETIREMENT SYSTEM
Freedom Capital Management Corporation (3/30/93)
Van Kampen Merritt (3/30/93)

MASSACHUSETTS PORT AUTHORITY RETIREMENT SYSTEM
Wellington Management Company (2/7/85)
Wellington Management Company (11/24/89-international)

A supplementary regulation was approved for the following:

Copley Partners I & II-venture capital

Custodian: Shawmut

MASSACHUSETTS TURNPIKE AUTHORITY RETIREMENT SYSTEM
S.J. Britton Investment Counsel (8/6/91)

Consultant: New England Pension Consultants

Custodian: Shawmut

MASSACHUSETTS WATER RESOURCES AUTHORITY RETIREMENT SYSTEM
The Boston Company (2/11/88)
Bank of Ireland Asset Management (6/10/93)
Putnam Institutional Management (6/10/93)
The Massachusetts Water Resources Authority Retirement System purchased shares of the PRIT fund on 2/1/88.

Consultant: The Hannah Group

Custodian: Fleet Bank

MAYNARD RETIREMENT SYSTEM
BayBanks Investment Management, Inc. (2/4/91)

Custodian: BayBank

MEDFORD RETIREMENT SYSTEM
Fleet Investment Advisors (3/14/85)
Lehndorff & Babson IV (3/12/90-real estate)
Shurgard Realty Advisors II (3/12/90-real estate)
Connecticut Investment Management, Inc. (8/14/91-equity)
PCA Realty Advisors (3/4/92-real estate) (Ruggles Center I)
Babson-Stewart Ivory, L.P. (7/28/92-international equity)

Consultant: The Hannah Group

Custodian: State Street Bank

MELROSE RETIREMENT SYSTEM

Fleet Investment Advisors (4/3/85)

Lehndorff & Babson IV (7/27/89-real estate)

Capital Research & Management Company (3/25/92-EuroPacific Growth Fund)

Custodian: Fleet Bank

METHUEN RETIREMENT SYSTEM

David L. Babson (10/16/86)

Custodian: Fleet Bank

MIDDLESEX COUNTY RETIREMENT SYSTEM

Fleet Investment Advisors (3/26/85)

Oppenheimer Capital (8/25/87)

Income Research & Management (9/28/89-fixed income)

Invesco (9/28/89)

Lehndorff & Babson IV (2/1/90-real estate)

Metric Institutional Realty-Metric Inst. Apt. Fund (2/1/90-real estate)

Metropolitan Life (2/1/90-real estate)

Shurgard Realty Advisors-Shurgard Inst. Fund L.P. II (2/1/90-real estate)

Bank of Ireland Asset Management (1/10/91-international equity)

Alliance Capital (1/10/91)

Commonwealth BioVentures III L.P. (3/27/91-venture capital)

Charles River Partnership VI-A (4/10/91-venture capital)

BayBanks Investment Management, Inc. (5/30/91-fixed income)

New England Partners I, L.P. (2/18/92-venture capital)

(New England Growth Fund I, L.P.)

Metric Inst. Realty Adv. (2/18/92-real estate)

(Metric Inst. Apt. Fund II, L.P.)

Rice Capital Group III, L.P. (2/18/92-venture capital)

(Rice Mezzanine Lenders L.P.)

PCA Realty Advisors (3/4/92-real estate)

(Ruggles Center I)

Equitable Life Assurance Society of the U.S. Equitable Real

Estate Investment Management, Inc. (12/10/92-real estate)

(Equitable Real Estate Value Enhancement Fund)

Mutual of New York (3/3/93)

Loomis, Sayles and Company (12/10/92-fixed income)

Van Kampen Merritt Management, Inc. (12/10/92-global bonds)

The Putnam Companies (4/8/93-international)

Merrill Lynch Asset Management (4/8/93)

Harbor Capital Management (7/16/93)

MIDDLESEX COUNTY RETIREMENT SYSTEM (cont'd)

J&W Seligman (12/2/93)

Metric (MAC Trust) (12/9/93)

A supplementary regulation was approved for the following:

APT Financial Services (APT Income Plus I L.P.)-real estate

Consultant: The Hannah Group

Custodian: BayBank

MILFORD RETIREMENT SYSTEM

BayBank Investment Management, Inc. (1/18/89)

Custodian: BayBank

MILTON RETIREMENT SYSTEM

The Milton Retirement System transferred to the PRIT fund on 7/1/86.

**MINUTEMAN REGIONAL VOCATIONAL TECHNICAL SCHOOL DISTRICT
RETIREMENT SYSTEM**

The Minuteman Regional Vocational Technical School District Retirement System transferred to the PRIT fund on 7/1/85.

MONTAGUE RETIREMENT SYSTEM

The Montague Retirement System transferred to the PRIT fund on 7/1/86.

NATICK RETIREMENT SYSTEM

United Investment Counsel (3/14/85)

Met. Life/State Street Research Bond Fund (11/27/91)

Met. Life/State Street Research S. Africa Free (1/29/92-equity)

Custodian: BayBank

NEEDHAM RETIREMENT SYSTEM

The Needham Retirement System transferred to the PRIT fund on 7/1/85.

NEW BEDFORD RETIREMENT SYSTEM

Massachusetts Financial Services (6/15/89)

Aetna Capital Management (6/15/89)

Aetna Capital Management (6/15/89-real estate)

Aetna Capital Management (6/15/89-international equity)

BayBanks Investment Management, Inc. (10/1/92)

NEW BEDFORD RETIREMENT SYSTEM (cont'd)

The New Bedford Retirement System purchased shares of the PRIT fund on 4/1/92.

Consultant: Wyatt Asset Services, Inc.

Custodian: BayBank

NEWBURYPORT RETIREMENT SYSTEM

Boston Financial Management, Inc. (3/28/85)

Custodian: State Street Bank

NEWTON RETIREMENT SYSTEM

1838 Investment Advisors (3/19/87)

Freedom Capital Management Corporation (3/19/87)

Phoenix Investment Counsel (1/21/92-equity)

David L. Babson (1/21/92-equity)

Putnam Investments (5/27/93-international)

Custodian: Boston Safe Deposit

NORFOLK COUNTY RETIREMENT SYSTEM

Wellington Management (6/24/93)

Investment Advisors (12/9/93)

Loomis Sayles (12/23/93)

Thompson, Siegel & Walmsley (12/30/93)

The Norfolk County Retirement System purchased shares of the PRIT fund on 11/1/85.

Consultant: The Hannah Group

Custodian: Bank of Boston

NORTH ADAMS RETIREMENT SYSTEM

de Burlo Group (3/25/85)

Custodian: Fleet Bank

NORTH ATTLEBORO RETIREMENT SYSTEM

PaineWebber Properties III (10/27/88-real estate)

PaineWebber Properties II (6/22/89-real estate)

PaineWebber Independent Fund (7/13/89-real estate)

Connecticut National Bank (12/26/90-equity)

Babson-Stewart Ivory (12/26/91-international equity)

(Babson-Stewart Ivory L.P.)

NORTH ATTLEBORO RETIREMENT SYSTEM (cont'd)

RhumbLine Advisers (10/1/92)

Freedom Capital Management Corporation (2/11/93)

Consultant: The Hannah Group

Custodian: BayBank

NORTHAMPTON RETIREMENT SYSTEM

de Burlo Group (4/18/85)

Custodian: BayBank

NORTHBRIDGE RETIREMENT SYSTEM

The Northbridge Retirement System transferred to the PRIT fund on 1/1/88.

NORWOOD RETIREMENT SYSTEM

Fleet Investment Advisors (3/5/85)

Dean Witter Dividend Growth Securities, Inc. (11/2/89)

Dean Witter Realty Yield Plus L.P. (11/2/89-real estate)

Manufacturers Life Insurance Equity Fund (11/2/89)

MFS Lifetime Capital Growth Trust (11/17/89)

Capital Research & Management (1/7/92-EuroPacific Growth Fund)

Mutual of NY Equity Fund (3/11/93)

Consultant: William M. Mercer

Custodian: BayBank

PEABODY RETIREMENT SYSTEM

Freedom Capital Management Corporation (7/8/85)

Clemente Capital, Inc. (3/22/90-Freedom Global Fund and Freedom Environmental Fund)

Custodian: BayBank

PITTSFIELD RETIREMENT SYSTEM

Freedom Capital Management Corporation (6/15/89)

Custodian: First Agricultural Bank

PLYMOUTH RETIREMENT SYSTEM

State Street Bank (2/24/89)

Consultant: New England Pension Consultants

Custodian: State Street Bank

PLYMOUTH COUNTY RETIREMENT SYSTEM

Internal-John McLellan (5/14/85-partial removal of statutory restrictions)
Babson-Stewart Ivory (5/4/89-international equity)
Lehndorff & Babson III (5/4/89-real estate)
Shurgard Realty Advisors (Shurgard Institutional Fund L.P.) (5/4/89-real estate)
Metric Institutional Realty (Metric Institutional Apartment Fund, L.P.) (10/5/89-real estate)
Charles River Partnership VI-A (3/26/91-venture capital)
American Network Group Institutional Fund I, L.P. (4/11/91- venture capital)
Shurgard Income Properties III (1/14/92-real estate)
Shurgard Income Properties IV (1/14/92-real estate)
New England Partners I, L.P. (7/1/92-venture capital)
(New England Growth Fund I, L.P.)
PW Trust GIC Fund (1/28/93)
Merrill Lynch Asset Management (11/19/93)
Internal - John McLellan (12/9/93)

Consultant: The Hannah Group

Custodian: State Street Bank

QUINCY RETIREMENT SYSTEM

Massachusetts Financial Services (2/9/89)
M.D. Sass Investors Company (2/9/89)
RhumbLine Advisers (3/13/92)
The Quincy Retirement System purchased shares of the PRIT fund on 3/1/90.

Custodian: State Street Bank

READING RETIREMENT SYSTEM

The Reading Retirement System transferred to the PRIT fund on 6/1/88.

REVERE RETIREMENT SYSTEM

Standard Chartered Equitor Asset Management (8/8/90)
Nutter Investment Advisors (12/31/91-equity)

Consultant: Faneuil Hall Securities, Inc.

Custodian: State Street Bank

SALEM RETIREMENT SYSTEM

Freedom Capital Management Corporation (11/17/88)
PaineWebber Properties III (11/17/88-real estate)
1838 Investment Advisors (4/12/90)

Consultant: The Hannah Group

Custodian: BayBank

SAUGUS RETIREMENT SYSTEM

The Saugus Retirement System transferred to the PRIT fund on 7/1/86.

SHREWSBURY RETIREMENT SYSTEM

Income Research & Management (7/29/93)

Putnam Inst. Management (7/29/93)

Consultant: The Hannah Group

Custodian: First National Bank of Boston

SOMERVILLE RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (2/19/92)

Standish, Ayer & Wood, Inc. (4/15/92)

Shawmut Investment Advisers (3/25/93)

Loomis Sayles (3/25/93)

Custodian: BayBank

SOUTHBRIDGE RETIREMENT SYSTEM

Freedom Capital Management Corporation (11/9/89)

Custodian: State Street Bank

SPRINGFIELD RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (10/13/87)

BayBanks Investment Management, Inc. (1/2/92)

Freedom Capital Management Corporation (1/2/92)

Massachusetts Mutual Life Insurance Company (1/2/92)

Wellington Management Company (1/2/92)

Consultant: Wyatt Asset Services, Inc.

Custodian: BayBank

STATE EMPLOYEES' RETIREMENT SYSTEM

The State Employees' Retirement System invests in the MASTERS Trust managed by the Office of the Treasurer. See list of investment counselors for the MASTERS Trust.

STONEHAM RETIREMENT SYSTEM

Lehndorff & Babson Real Estate Counsel (Property Fund III) (11/17/88-real estate)

Lehndorff & Babson Real Estate Counsel (Property Fund IV) (1/15/91-real estate)

Independence Investment Associates (12/10/91)

Consultant: The Hannah Group

Custodian: BayBank

SWAMPSCOTT RETIREMENT SYSTEM

de Burlo Group (3/27/85)

Custodian: Fleet Bank

TAUNTON RETIREMENT SYSTEM

U.S. Trust Company (6/25/85)

Lehndorff & Babson Real Estate IV (12/21/89-real estate)

Capital Research & Management (5/16/90-EuroPacific Growth Fund)

Consultant: Prime (Kidder Peabody)

Custodian: U.S. Trust

TEACHERS' RETIREMENT SYSTEM

The Teachers' Retirement System invests in the MASTERS Trust managed by the Office of the Treasurer. See list of investment counselors for the MASTERS Trust.

WAKEFIELD RETIREMENT SYSTEM

The Wakefield Retirement System transferred to the PRIT fund on 7/1/85.

WALTHAM RETIREMENT SYSTEM

BayBanks Investment Management, Inc. (2/11/85)

Custodian: BayBank

WATERTOWN RETIREMENT SYSTEM

Lehndorff & Babson III (10/5/89-real estate)

INVESCO (10/5/89)

Wellington Management Company (3/20/91-small cap. equities)

Newbold's Asset Management, Inc. (3/11/93)

Consultant: Dahab Associates, Inc.

Custodian: BayBank

WEBSTER RETIREMENT SYSTEM

Aetna Capital Management (6/26/91-domestic)

Aetna Capital Management (6/26/91-real estate)

Aetna Capital Management (6/26/91-international equity)

WELLESLEY RETIREMENT SYSTEM

Standish, Ayer & Wood (2/27/85)

State Street Research & Management Company (1/23/90)

Consolidated Investment Corporation (Consolidated Standish Short-Term Asset Reserve Fund) (1/2/91)

WELLESLEY RETIREMENT SYSTEM (cont'd)

Standish International Fixed Income Fund (5/8/91)

State Street Bank & Trust (South Africa Free EAFE Fund) (1/21/92- international equity)

A supplementary regulation was approved for the following:

Standish Small Equity Fund

Consultant: William M. Mercer

Custodian: Shawmut

WESTFIELD RETIREMENT SYSTEM

PaineWebber Properties III (11/17/88-real estate)

PaineWebber Properties II, III (9/14/89-real estate)

Freedom Capital Management Corporation (10/16/90)

State Street Research & Management Company (10/16/90)

Loomis Sayles & Co. (1/21/93)

Custodian: BayBank

WEST SPRINGFIELD RETIREMENT SYSTEM

Shawmut Bank, N.A. (2/21/86)

Custodian: Shawmut

WEYMOUTH RETIREMENT SYSTEM

The Weymouth Retirement System transferred to the PRIT fund on 10/1/84.

WINCHESTER RETIREMENT SYSTEM

Freedom Capital Management Corporation (4/26/90)

J. L. Kaplan - Domestic Equities (10/28/93)

Custodian: BayBank

WINTHROP RETIREMENT SYSTEM

Bear Stearns - Balanced (7/29/93)

Custodian: BayBank

WOBURN RETIREMENT SYSTEM

David L. Babson (3/21/88)

Custodian: BayBank

WORCESTER RETIREMENT SYSTEM

Fleet Investment Advisors (1/14/87)
Safety Fund National Bank (3/6/91)
State Street Research & Management (3/6/91)
Metropolitan Life Insurance Tower Fund (3/6/91-real estate)
Metropolitan Life Insurance (3/6/91-real estate-Closed-End II Fund)
BEA Associates (8/15/91-international equity)
Bank of Ireland Asset Management Ltd. (8/15/91-international equity)
Investment Advisors, Inc. (3/11/92-small cap.)
New England Partners I, L.P. (3/11/92-venture capital)
(New England Growth Fund I, L.P.)
Shawmut Investment Advisers (3/11/92-small cap.)
Rice Capital Group III, L.P. (3/11/92-venture capital)
(Rice Mezzanine Lenders L.P.)
David L. Babson (7/30/92-fixed income)
PW Trust Company (2/11/93)
Merrill Lynch Asset Management (2/12/93)
Putnam World Income Trust Fund (7/26/93)
MIG (7/29/93)
Equitable Real Estate (7/29/93)
Metric Inst. Realty Advisors (7/29/93)
L&B Real Estate Counsel (8/19/93)
E.R. Taylor (9/30/93)

Consultant: The Hannah Group

Custodian: State Street Bank

WORCESTER COUNTY RETIREMENT SYSTEM

Wellington Management Company (8/21/91 - fixed income)
Shawmut Investment Advisers (8/21/91)
Freedom Capital Management Corporation (9/15/93)
Harbor Capital Management (9/8/93)
David L. Babson (9/8/93)
Bank of Ireland Asset Management (9/8/93)

Consultant: Prime (Kidder Peabody)

Custodian: BayBank

The PENSION RESERVE INVESTMENT TRUST (PRIT) Fund has retained the following investment counselors as of December 31, 1993:

Domestic Equity:

Alliance Capital Management Corporation
Bankers Trust Company
The Boston Company Institutional Investors, Inc.
Brown Capital Management, Inc.
Fidelity Management Trust Company
Kennedy Capital Management
Massachusetts Financial Services
PanAgora Asset Management
The Putnam Advisory Company, Inc.
RhumbLine Advisors
State Street Bank & Trust Company
Trust Company of the West
Valuequest Ltd

Domestic Fixed Income:

Bankers Trust Company
Fidelity Management Trust Company
W. R. Huff Asset Management Company
Pacific Asset Management Company (PIMCO)
Putnam Advisory Company
Standish, Ayer & Wood, Inc.
TCW Asset Management Company

International/Global Equity:

Babson-Stewart Ivory International
Batterymarch Financial Management
Capital Guardian Trust Company
Cursitor Eaton Asset Management (TCW)
Emerging Markets Management
Lombard Odier International Portfolio Management Limited
OSV Financial Management GmbH
Pareto Partners
Putnam Advisory Company
Scudder, Stevens & Clark, Inc.
State Street Bank & Trust Company

International/Global Fixed Income:

Baring International Investment Limited
Massachusetts Financial Services
Rothchild International Asset Management Limited

Venture Capital:

Advent Network
APA Ventures III
APA UK IV
APA Capital Risque III
APA Germ. European Ventures
Asia Pacific Trust
Comm. BioVenture III
Comm. BioVenture V
Davis Venture Partners
Golder, Thoma & Cressey
John Hancock Ventures II
John Hancock Ventures III
Hancock Intl. Equity
Mayflower Fund
M.T.D.C.
Morgan Holland Fund II
Schroder Ventures III
Southern California Ventures
T.A. Associates
Venture Capital Fund of N.E.
Vista III

Special Equities:

Advent ESSF
Apax European Buy-In Fund
The Blackstone Group, L.P.
Boston Ventures III
Boston Ventures IV
Brown Bros. Harriman & Co.
Capital Resource Partners
DLJ Merchant Banking, Inc.
Dominion Ventures, Inc.
Equitable Capital Corp.

Special Equities (cont'd):

Forstmann Little III
Forstmann Little IV
Forstmann Little V
Freeman Spogli & Co.
Invexco
Joseph Littlejohn & Levy
Joseph Littlejohn Levy II
KKR 1986 & 1987 Funds
Landmark Ventures, Inc.
Madison Group, L.P.
Nash & Sells
Schroder UK II
Schroder Venture Partners
Smith Offshore
Thomas H. Lee Equity Partners
Wm. Blair Mezzanine Fund

Real Estate:

Aldrich, Eastman & Waltch
Bear Stearns Asset Management (Apt. Fund)
Boston Financial Group
Copley Realty Advisors
Hancock Realty Investors
Heitman Advisory Corp.
INVESCO Realty Advisors
JMB Inst. Realty Corp.
Mass. Mutual
T.A. Associates Realty
TCW Realty

Consultant: Wilshire Associates

Custodian: State Street Bank

The MASTERS Trust has retained the following external investment counselors as of December 31, 1993:

Domestic Fixed Income Managers:

Dodge & Cox
Loomis Sayles and Company

Domestic Fixed Income Managers (cont'd):

Morgan Grenfell
PanAgora Asset Management
Standish Ayer and Wood
Smith Barney
The Putnam Companies
Trust Company of the West

Global Fixed Income Managers:

Massachusetts Financial Services
The Putnam Companies
Scudder, Stevens and Clark International

Domestic Equity Managers:

Alliance Capital Management
Chancellor Capital Management, Inc.
Fidelity Management Trust Company
Goldman Sachs and Company
Independence Investment Associates
Massachusetts Financial Services
Morgan Stanley Asset Management
Numeric Investors, L.P.
State Street Global Advisors
The Boston Company

International Equity Managers:

B.E.A. Associates
Fidelity Management Trust Company
PanAgora Asset Management
Wardley Investment Services Ltd.

Domestic Balance Manager:

The RXR Group

Alternative Type Investment Managers:

Massachusetts Fiduciary Advisors
Sentry Financial Corporation

Real Estate Managers:

Aetna Life Insurance
Aldrich, Eastman & Waltch
Bear Stearns Asset Management
Copley Real Estate Advisors
First Chicago - Brinson Partners
Franklin Properties, Inc.
Hancock Realty Investors
Lehndorff and Babson Real Estate Council
Meridian Point Company
Metric Institutional Realty Advisors
Public Storage Institutional Realty
Shurgard Institutional
The Sierra Capital Realty Trust
TA Associates Realty Trust

Venture Capital Managers:

Beta Partners Limited Partnership
Bigler Crossroads Investment Management Company
Clayton and Dublier
Frontenac Company
Hancock Venture Partners
Prudential Equity Investors
Media Communication Partner
Narragansett Capital, Inc.
New Enterprise Associates
The Vista Group
Thomas H. Lee Equity Partners
Welsh, Carson, Anderson and Stowe

Consultants: Callan & Associates
The Townsend Group
Custodian: The Boston Company

PENSION INVESTMENT ADVISORY UNIT

ROBERT P. SHAW
Director

INVESTMENT ANALYSTS

VICTORIA MARCORELLE
MARY J. McNAMARA

ROSE CIPRIANI
Administrative Assistant

**DIVISION OF PUBLIC EMPLOYEE
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